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UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

JULY, 95

Forecasting Systems
Meteorological Office
London Rd
Bracknell
Berkshire
RG12 2SZ

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 ms^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-12 soundings at 500 km resolution . Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25	850-1000
26	100-300
27	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

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Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period		:One calendar month.	
Data monitored		:Reports from each unique identifier for ships, fixed buoys and platforms.	
Standard of comparison		:Background field from Bracknell global model.	
Observation times		:00, 06, 12, 18 UTC	
Elements monitored		:Mean sea level pressure (hPa). :Wind speed ($m\ s^{-1}$). :Wind direction (Degrees).	
Parameters monitored			
	:NOBS	:Number of observations received excluding duplicates.	
	:NGE	:Number of observations with gross errors.	
	:PGE	:Percentage of observations with gross errors.	
	:SD	:SD of difference of observations from background values excluding those with gross errors.	
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**	
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.	
GROSS ERROR LIMIT	:15 hPa :25 $m\ s^{-1}$	(pressure) (vector wind)	
SELECTION CRITERIA	:NOBS	≥ 20 , and one or more of the following:	
	1.|bias|	≥ 4 hPa	(pressure),
		≥ 5 $m\ s^{-1}$	(wind speed),
		≥ 30 degrees	(direction).
	2.SD	≥ 6 hPa	(pressure),
		≥ 80 degrees	(direction).
	3.PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
ATSR	ALL	MSLP	SUR	24	0	0	3.4	5.9	6.9
A8SF	ALL	MSLP	SUR	63	0	0	1.5	4.2	4.5
CG2241	ALL	MSLP	SUR	32	10	31	1.0	-13.4	13.4
CTHI	ALL	MSLP	SUR	22	8	36	5.4	-5.8	8.0
CZ9742	ALL	MSLP	SUR	53	53	100	0.0	0.0	0.0
C6FA6	ALL	MSLP	SUR	41	0	0	1.0	-6.2	6.3
C6IL3	ALL	MSLP	SUR	43	0	0	1.3	6.2	6.3
D5NE	ALL	MSLP	SUR	38	0	0	1.3	6.4	6.5
ELRE5	ALL	MSLP	SUR	74	0	0	1.2	9.7	9.8
FNAT	ALL	MSLP	SUR	101	0	0	1.0	-4.6	4.7
LACF4	ALL	MSLP	SUR	69	0	0	1.3	-4.2	4.4
OXPQ5	ALL	MSLP	SUR	24	0	0	2.0	-5.6	5.9
OXWJ2	ALL	MSLP	SUR	28	0	0	4.3	5.3	6.8
OZBL2	ALL	MSLP	SUR	46	0	0	0.7	6.5	6.5
PJNF	ALL	MSLP	SUR	28	2	7	4.9	-4.2	6.5
P3XM4	ALL	MSLP	SUR	40	1	2	1.3	-4.4	4.6
TEST	ALL	MSLP	SUR	77	0	0	0.7	-4.0	4.0
TFLE	ALL	MSLP	SUR	27	0	0	1.4	-4.3	4.6
UFOJ	ALL	MSLP	SUR	38	0	0	1.4	-4.0	4.2
UFYN	ALL	MSLP	SUR	20	0	0	1.8	-5.1	5.4
UPIU	ALL	MSLP	SUR	38	0	0	1.5	4.1	4.4
UPUA	ALL	MSLP	SUR	38	1	3	1.1	-11.2	11.2
USNN	ALL	MSLP	SUR	50	0	0	1.8	-5.6	5.9
VCQL	ALL	MSLP	SUR	22	0	0	1.3	-6.4	6.6
VRIZ	ALL	MSLP	SUR	25	2	8	3.7	-5.7	6.8
VRUI9	ALL	MSLP	SUR	37	0	0	1.3	-4.1	4.3
WAH9146	ALL	MSLP	SUR	23	0	0	1.7	-5.0	5.3
WCB5820	ALL	MSLP	SUR	37	0	0	1.2	9.6	9.7
WPPO	ALL	MSLP	SUR	24	0	0	0.9	4.5	4.5
3EAY5	ALL	MSLP	SUR	38	0	0	1.3	-5.9	6.0
3ESE9	ALL	MSLP	SUR	43	0	0	1.2	4.7	4.8
3EWF5	ALL	MSLP	SUR	26	0	0	1.4	-4.7	4.9
3FJJ3	ALL	MSLP	SUR	29	0	0	1.5	-6.0	6.2
3FLS2	ALL	MSLP	SUR	34	0	0	1.4	-9.4	9.5
9KIL	ALL	MSLP	SUR	30	12	40	5.3	-3.6	6.4
WIND SPEED									
ELDT6	ALL	SPEED	SUR	24	0	0	2.3	5.7	6.1
ELLE9	ALL	SPEED	SUR	26	0	0	5.1	9.7	10.9
ELPB8	ALL	SPEED	SUR	72	0	0	2.7	7.1	7.6
FNAT	ALL	SPEED	SUR	77	0	0	3.5	5.0	6.1
FNCM	ALL	SPEED	SUR	159	0	0	4.7	5.4	7.2
FNKA	ALL	SPEED	SUR	28	0	0	7.1	6.7	9.8
HSGX	ALL	SPEED	SUR	32	1	3	4.6	11.5	12.4
OXWJ2	ALL	SPEED	SUR	28	0	0	8.1	10.1	12.9
VJBE	ALL	SPEED	SUR	37	0	0	2.9	5.2	6.0
V2TZ	ALL	SPEED	SUR	33	0	0	4.5	7.7	8.9
Y5EJ	ALL	SPEED	SUR	26	0	0	3.9	5.2	6.5
3EPY3	ALL	SPEED	SUR	28	0	0	3.2	-6.9	7.6
9HAS4	ALL	SPEED	SUR	21	0	0	2.0	6.0	6.4
WIND DIRECTION									
KKFW	ALL	DIRN.	SUR	28	0	0	101.3	34.0	106.8
VRIZ	ALL	DIRN.	SUR	21	0	0	73.4	78.4	107.3
XCKX	ALL	DIRN.	SUR	21	0	0	80.5	5.8	80.7
32319	ALL	DIRN.	SUR	49	0	0	33.9	33.4	47.6
44013	ALL	DIRN.	SUR	37	0	0	28.7	-52.6	59.9
45006	ALL	DIRN.	SUR	37	0	0	31.7	-34.6	46.9
46146	ALL	DIRN.	SUR	62	0	0	62.6	-34.7	71.6
51007	ALL	DIRN.	SUR	95	0	0	16.9	-32.4	36.6

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
WIND DIRECTION									
51020	ALL	DIRN.	SUR	26	0	0	112.5	-13.3	113.3
62126	ALL	DIRN.	SUR	68	0	0	39.9	-59.5	71.6
9HVO3	ALL	DIRN.	SUR	31	0	0	83.8	67.9	107.8

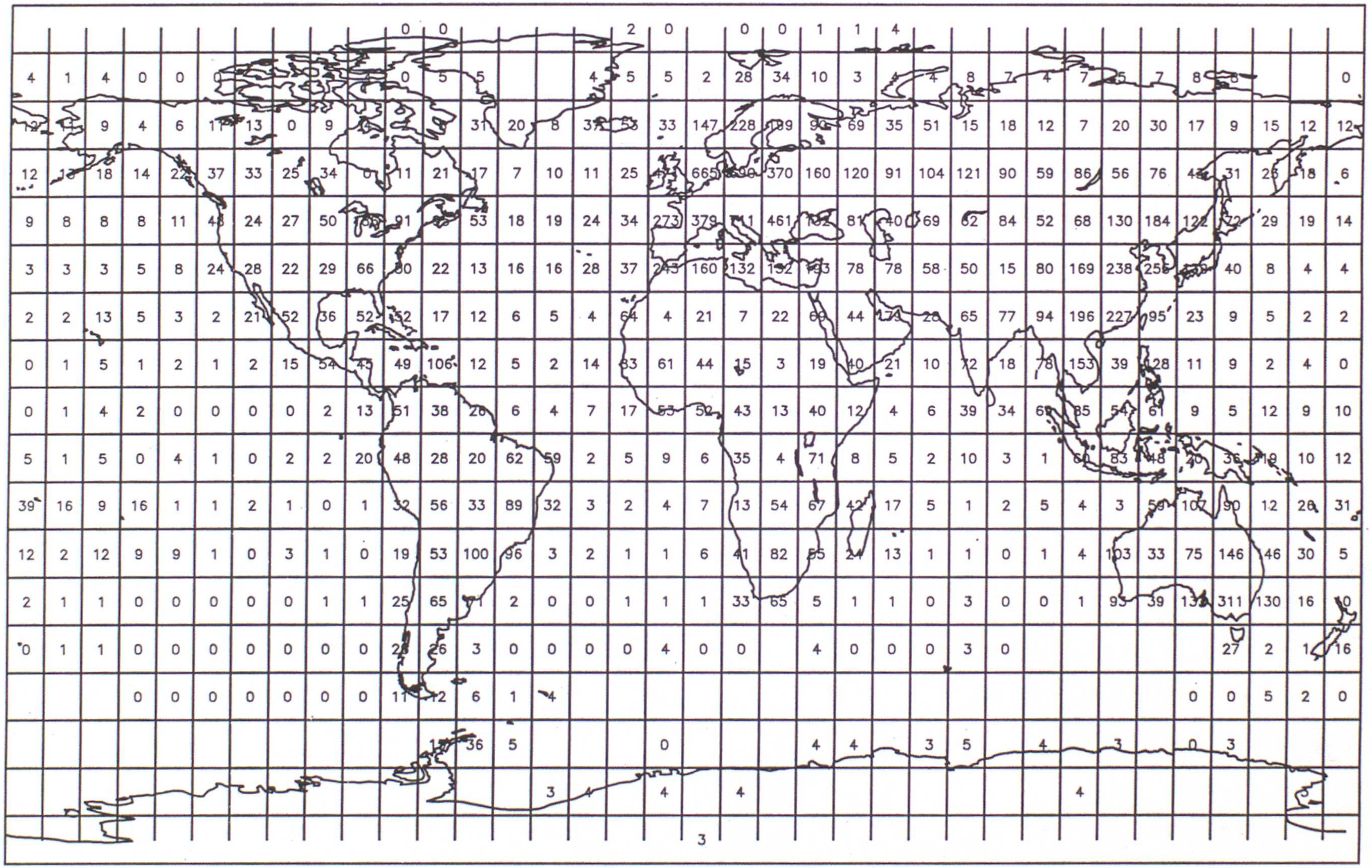
AVAILABILITY – SHIP/SYNOP – JULY 1995

FIGURE 1

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18448



										0	0					2	0		0	0	1	1	4												
4	1	4	0	0	0				0	0	5	5			4	5	5	2	28	34	10	3	4	4	8	7	4	7	5	7	8	8			0
12	11	9	4	6	17	13	0	9	[illegible]	[illegible]	[illegible]	31	20	8	37	53	33	147	228	189	96	69	35	51	15	18	12	7	20	30	17	9	15	12	12
12	13	18	14	22	37	33	25	34	0	11	21	17	7	10	11	25	47	665	590	370	160	120	91	104	121	90	59	86	56	76	43	31	25	18	6
9	8	8	8	11	48	24	27	50	[illegible]	91	[illegible]	53	18	19	24	34	273	379	[illegible]	461	[illegible]	81	40	69	62	84	52	68	130	184	122	72	29	19	14
3	3	3	5	8	24	28	22	29	66	30	22	13	16	16	28	37	243	160	132	152	133	78	78	58	50	15	80	169	238	256	[illegible]	40	8	4	4
2	2	13	5	3	2	21	52	36	52	152	17	12	6	5	4	64	4	21	7	22	69	44	173	28	65	77	94	196	227	95	23	9	5	2	2
0	1	5	1	2	1	2	15	54	45	49	106	12	5	2	14	83	61	44	15	3	19	40	21	10	72	18	78	153	39	128	11	9	2	4	0
0	1	4	2	0	0	0	0	2	13	51	38	26	6	4	7	17	53	52	43	13	40	12	4	6	39	34	69	85	54	61	9	5	12	9	10
5	1	5	0	4	1	0	2	2	20	48	28	20	62	59	2	5	9	6	35	4	71	8	5	2	10	3	1	60	83	148	20	36	19	10	12
39	16	9	16	1	1	2	1	0	1	32	56	33	89	32	3	2	4	7	13	54	67	42	17	5	1	2	5	4	3	59	107	90	12	28	31
12	2	12	9	9	1	0	3	1	0	19	53	100	96	3	2	1	1	6	41	82	55	24	13	1	1	0	1	4	103	33	75	146	46	30	5
2	1	1	0	0	0	0	0	1	1	25	65	71	2	0	0	1	1	1	33	65	5	1	1	0	3	0	0	1	93	39	133	311	130	16	10
0	1	1	0	0	0	0	0	0	0	28	26	3	0	0	0	0	4	0	0		4	0	0	0	3	0						27	2	1	16
			0	0	0	0	0	0	0	11	12	6	1	4																	0	0	5	2	0
											1	36	5				0				4	4		3	5		4		3		0	3			
														3	4		4		4									4							
																		3																	

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:May, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 06, 12, 18 UTC

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 , and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 $m\ s^{-1}$ (wind speed),
$\geq$ 30 degrees (direction).

2.SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25.

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
14919	-41.0	31.2	ALL	MSLP	SUR	236	123	52	4.7	8.6	9.8
16937	-36.6	72.2	ALL	MSLP	SUR	95	0	0	1.6	-4.5	4.7
16944	-52.5	74.9	ALL	MSLP	SUR	272	66	24	6.4	3.3	7.2
16946	-47.6	88.9	ALL	MSLP	SUR	248	66	27	6.8	-2.1	7.1
16949	-41.5	34.4	ALL	MSLP	SUR	259	54	21	8.2	1.2	8.2
16950	-50.3	46.5	ALL	MSLP	SUR	283	47	17	6.8	-4.8	8.3
17608	-46.8	28.8	ALL	MSLP	SUR	652	264	40	6.2	3.8	7.2
21523	42.3	143.3	ALL	MSLP	SUR	257	0	0	1.1	-5.5	5.6
33536	-49.0	17.5	ALL	MSLP	SUR	97	40	41	8.3	4.2	9.3
55901	-45.3	139.7	ALL	MSLP	SUR	259	21	8	4.0	6.5	7.6
55903	-48.3	140.8	ALL	MSLP	SUR	283	96	34	3.5	-9.4	10.0
56903	-32.9	109.0	ALL	MSLP	SUR	237	193	81	6.8	-8.4	10.8
56907	-52.9	136.2	ALL	MSLP	SUR	298	55	18	7.5	-0.8	7.6
56908	-54.5	142.2	ALL	MSLP	SUR	302	87	29	5.6	2.8	6.3
WIND SPEED											
46657	47.0	-146.0	ALL	SPEED	SUR	390	0	0	2.2	-6.6	6.9
55587	-22.8	159.5	ALL	SPEED	SUR	273	0	0	1.7	-5.0	5.3
WIND DIRECTION											
46556	49.8	-164.1	ALL	DIRN.	SUR	100	0	0	72.8	84.2	111.3
46558	40.4	-159.0	ALL	DIRN.	SUR	55	0	0	17.9	-39.4	43.3
46657	47.0	-146.0	ALL	DIRN.	SUR	283	0	0	104.7	63.2	122.3
55586	-39.1	155.6	ALL	DIRN.	SUR	240	0	0	66.3	-107.4	126.2
55589	-38.8	162.4	ALL	DIRN.	SUR	688	0	0	29.8	-31.6	43.5

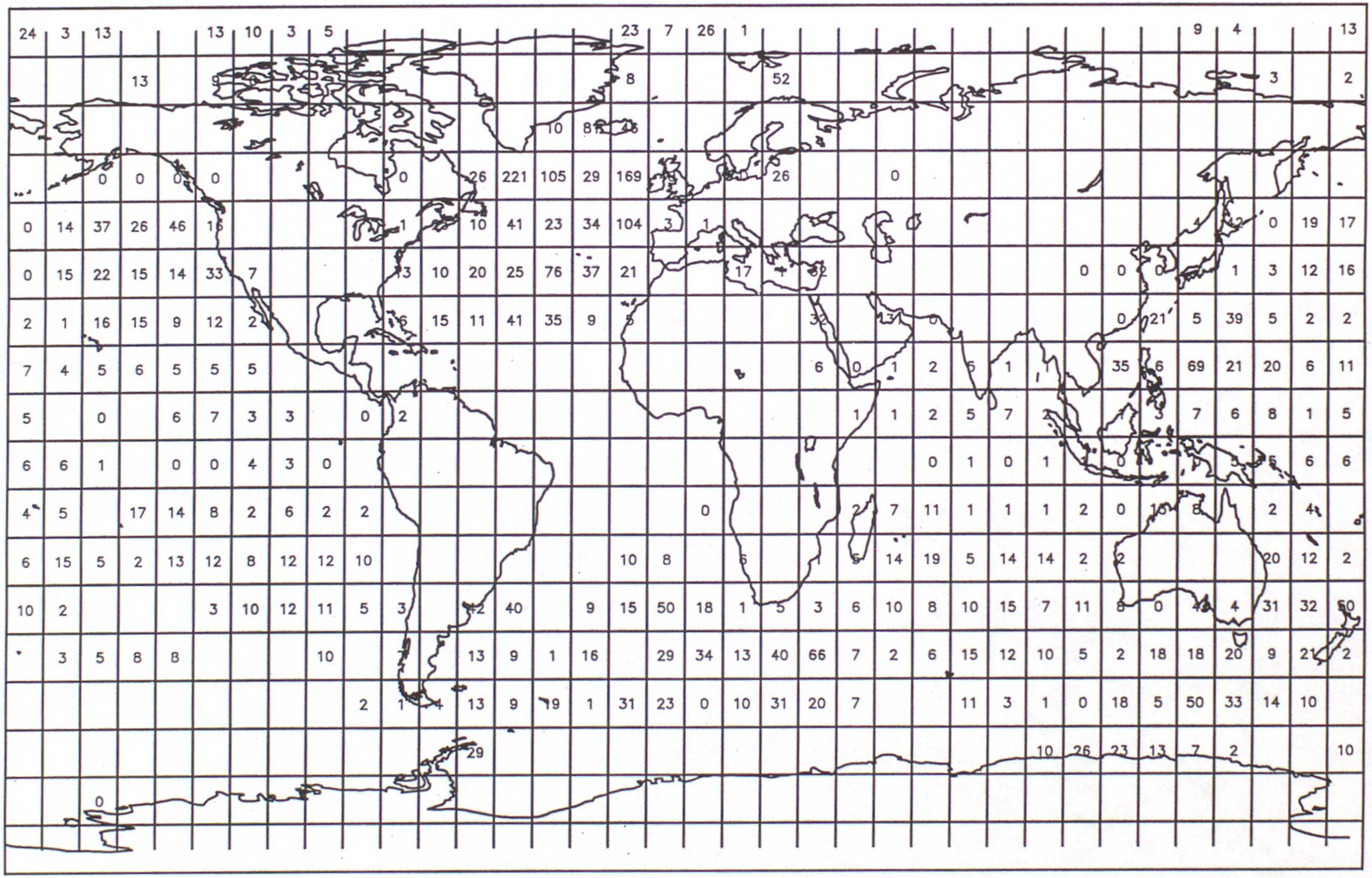
AVAILABILITY – DRIBU – JULY 1995

FIGURE 2

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 4138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13 9 8 52 3 2
10 81 46
0 0 0 0 0 26 221 105 29 169 26 0
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0 15 22 15 14 33 7 13 10 20 25 76 37 21 17 32 0 0 0 1 3 12 16
2 1 16 15 9 12 2 6 15 11 41 35 9 5 32 31 0 0 21 5 39 5 2 2
7 4 5 6 5 5 5 6 0 1 2 5 1 1 35 6 69 21 20 6 11
5 0 6 7 3 3 0 2 1 1 2 5 7 2 1 3 7 6 8 1 5
6 6 1 0 0 4 3 0 0 1 0 1 1 0 0 3 5 6 6
4 5 17 14 8 2 6 2 2 0 2 7 11 1 1 1 2 0 15 8 2 4
6 15 5 2 13 12 8 12 12 10 10 8 6 1 5 14 19 5 14 14 2 2 20 12 2
10 2 3 10 12 11 5 3 42 40 9 15 50 18 1 5 3 6 10 8 10 15 7 11 8 0 43 4 31 32 50
3 5 8 8 10 7 13 9 1 16 29 34 13 40 66 7 2 6 15 12 10 5 2 18 18 20 9 21 2
2 1 4 13 9 19 1 31 23 0 10 31 20 7 11 3 1 0 18 5 50 33 14 10
29 10 26 23 13 7 2 10
0

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for synops & autosynops.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).

Parameters monitored

:HT(m) :Station height (in metres) as given in WMO No. 9 Vol A

:RP :Pressure reporting practice
M=mean sea level pressure (hPa) reported.
S=Station level pressure reported.
8=Geopotential height (m) of 850 hPa surface reported.
7=Geopotential height (m) of 700 hPa surface reported.

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.
:%REJ :Percentage of observations flagged.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)

SELECTION CRITERIA :NOBS ≥ 20 ,and one or more of the following:

1. |bias| ≥ 4 hPa
2. SD ≥ 6 hPa
3. PGE ≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	114	2	2	69	0.9	4.6	4.7
60468	35.6N	6.2E	1052	S8	71	71	100	35	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	111	110	99	100	0.0	14.6	14.6
60571	31.6N	2.2W	773	S8	110	0	0	17	0.8	-4.0	4.1
60670	24.6N	9.5E	1054	S8	108	0	0	100	0.6	8.7	8.7
63333	11.1N	39.7E	1916	MS	79	1	1	78	1.4	7.1	7.2
63453	8.8N	39.8E	1062	S	48	3	6	94	1.3	12.3	12.4
63478	5.1N	44.6E	320	MS	41	0	0	0	1.5	7.1	7.3
63801	4.9S	29.6E	885	S8	26	0	0	96	1.0	7.7	7.8
68014	19.6S	18.1E	1411	S8	91	0	0	92	1.6	-5.7	5.9
68442	29.1S	26.3E	1354	S8	122	0	0	99	0.8	-5.7	5.8

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
29999	52.5N	99.8E	1570	S8	100	95	95	91	9.4	-3.9	10.2
30554	54.5N	113.6E	995	MS	62	2	3	97	1.3	10.3	10.4
36870	43.4N	77.0E	663	MS	61	60	98	100	0.0	-14.3	14.3
40701	39.3N	44.4E	1470	MS	68	0	0	93	1.5	6.5	6.7
40740	36.8N	54.3E	1287	MS	48	0	0	23	1.1	-4.3	4.4
40743	36.2N	57.7E	941	MS	107	0	0	30	1.0	-5.3	5.4
40762	35.3N	59.2E	1333	MS	106	12	11	100	0.8	-13.3	13.3
40763	35.2N	58.5E	1060	MS	41	0	0	37	1.0	-6.3	6.4
40783	32.4N	49.7E	1972	MS	32	0	0	91	0.7	-5.4	5.4
40789	33.8N	55.1E	921	MS	59	1	2	92	1.3	7.1	7.2
40836	30.8N	51.7E	1880	MS	66	1	2	62	1.1	7.3	7.4
40859	29.0N	53.7E	1383	MS	68	4	6	99	1.1	8.5	8.6
41244	24.2N	55.8E	299	M	116	0	0	0	0.9	8.5	8.5
41254	23.1N	57.7E	1755	S8	86	86	100	100	0.0	0.0	0.0
44292	47.9N	107.0E	1338	MS	82	0	0	12	1.4	4.4	4.6
44298	46.4N	108.2E	1285	MS	69	1	1	7	1.5	4.0	4.3
44416	28.6N	81.6E	720	MS	55	2	4	24	1.6	4.7	5.0
44477	27.0N	87.4E	1445	S8	44	44	100	100	0.0	0.0	0.0
47022	40.8N	128.2E	1206	S	98	1	1	26	1.0	4.2	4.3
52602	38.8N	93.4E	2734	S	121	0	0	16	1.6	-4.7	5.0
56444	28.5N	98.9E	3488	S	120	120	100	100	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	105	2	2	96	2.8	7.6	8.1
57816	26.5N	106.7E	1222	MS	121	120	99	100	0.0	14.6	14.6

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	30	0	0	3	0.9	-4.8	4.9
80234	4.2N	73.6W	431	MS	38	0	0	5	1.3	4.2	4.4
82392	3.7S	40.4W	83	MS	50	0	0	42	5.3	-5.6	7.7
82704	7.6S	72.7W	170	MS	57	1	2	0	1.4	-5.1	5.3
82825	8.8S	63.1W	95	MS	62	0	0	0	1.2	-5.8	5.9
83208	12.7S	60.1W	652	MS	79	0	0	8	1.4	4.8	5.0
83214	10.3S	54.9W	285	MS	42	0	0	21	0.8	-7.0	7.0
83235	12.3S	46.4W	660	MS	73	0	0	96	1.0	6.9	7.0
83295	13.4S	39.9W	755	MS	22	0	0	95	0.6	-4.5	4.5
83319	14.7S	52.4W	315	MS	43	0	0	0	1.0	-4.9	5.0
83332	14.1S	46.4W	950	MS	66	27	41	100	0.7	13.8	13.8
83376	15.9S	49.0W	730	MS	74	0	0	28	0.9	-4.1	4.2
83408	14.3S	43.8W	556	MS	44	0	0	100	0.9	11.5	11.5
83423	16.7S	49.3W	729	MS	75	0	0	55	0.8	-5.4	5.5
83488	17.8S	42.9W	1097	MS	63	63	100	95	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	71	1	1	23	2.9	-8.0	8.5

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
83531	18.6S	46.5W	896	MS	45	0	0	78	0.9	-7.5	7.6
83587	19.8S	43.9W	850	MS	64	0	0	97	1.1	-8.1	8.2
83689	21.3S	43.8W	1171	MS	44	0	0	93	0.9	4.6	4.7
83704	22.3S	53.9W	369	MS	61	4	7	67	2.3	-9.7	10.0
84472	7.1S	78.5W	2622	S	39	2	5	90	2.3	-5.9	6.3
84501	8.1S	79.0W	30	MS	114	0	0	1	1.7	4.2	4.5
84542	9.4S	77.6W	2760	S	30	0	0	3	2.8	5.2	5.9
84658	12.6S	69.2W	266	MS	112	0	0	0	1.9	5.7	6.0
84686	13.6S	72.0W	3249	S	113	0	0	0	1.6	-4.4	4.7
84782	18.1S	70.3W	469	MS	114	0	0	25	1.9	7.9	8.1
85312	19.8S	63.9W	992	S	39	1	3	95	1.5	-9.4	9.5
85394	22.8S	64.3W	381	MS	35	1	3	57	3.0	4.6	5.5
85406	18.3S	70.3W	58	M	117	0	0	4	1.8	5.6	5.9

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
72618	44.5N	70.5W	205	MS	23	0	0	96	1.5	6.0	6.2
76160	29.1N	111.0W	211	MS	33	1	3	0	1.1	-4.0	4.1
76373	25.3N	105.8W	1967	MS	63	63	100	100	0.0	0.0	0.0
76539	22.1N	101.0W	1871	MS	94	0	0	78	0.9	-4.1	4.2
76632	20.1N	98.7W	2417	MS	54	0	0	98	0.9	-5.8	5.9
76658	19.3N	103.6W	723	MS	26	26	100	19	0.0	0.0	0.0
76726	18.9N	99.3W	1560	MS	80	2	3	99	1.3	-7.3	7.4
76762	17.5N	99.5W	1360	MS	73	1	1	99	1.0	11.8	11.8
76848	16.3N	92.1W	1530	MS	101	6	6	99	3.4	-12.7	13.1

WMO REGION 5:

NO SUSPECTS IN THIS REGION

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	88	0	0	100	1.6	-5.5	5.7
04313	80.6N	13.7W	10	MS	51	38	75	0	0.6	0.3	0.7
08221	40.5N	3.6W	633	MS	120	0	0	98	1.0	5.9	6.0
08232	40.9N	1.9W	1063	S8	76	0	0	96	1.4	5.3	5.5
11346	47.3N	12.8E	917	S	78	0	0	40	1.4	-4.5	4.7
15052	47.4N	25.6E	1541	S8	120	5	4	67	0.8	-4.6	4.7
16020	46.5N	11.3E	1461	MS	89	89	100	0	0.0	0.0	0.0
16614	40.4N	21.3E	604	MS	109	0	0	96	1.2	-7.1	7.2
17084	40.6N	35.0E	837	MS	117	0	0	99	1.1	6.7	6.8
17190	38.8N	30.5E	1034	S8	115	1	1	86	1.1	4.3	4.4
17260	37.1N	37.4E	855	MS	113	98	87	100	0.2	14.6	14.6
40184	31.8N	35.2E	809	S8	118	0	0	99	1.2	5.6	5.7

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89066	68.1S	67.1W	4	M	116	2	2	8	3.9	-4.5	6.0
89208	90.0S	0.0W	2835	S7	109	109	100	21	0.0	0.0	0.0
89324	80.0S	120.0W	1530	S8	113	4	4	16	4.0	-4.7	6.2
89606	78.5S	106.9E	3420	S7	118	63	53	86	5.0	-9.9	11.1
89757	73.8S	55.7E	2775	M	60	60	100	30	0.0	0.0	0.0
89803	68.5S	102.2E	2118	S7	79	6	8	62	3.5	-9.5	10.1
89805	74.1S	109.8E	3070	S7	73	16	22	26	6.1	1.1	6.2
89811	66.7S	112.9E	1362	S8	84	6	7	51	4.0	-7.3	8.3

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89814	66.0S	111.1E	10	MS	65	21	32	31	4.7	-3.7	6.0
89828	74.5S	123.0E	3280	S7	113	20	18	56	3.9	8.6	9.4
89860	74.2S	160.3E	1772	S8	107	0	0	0	3.4	-4.8	5.9
89861	74.5S	160.5E	1525	S8	111	0	0	14	3.1	-7.4	8.0
89866	77.4S	163.8E	120	MS	107	0	0	19	2.9	4.3	5.2

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in $m\ s^{-1}$

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 $m\ s^{-1}$ Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	96	0	1	2.0	0.6	98	0	2	0	9.1	0.9
AAL	5119	0	1	1.6	0.1	5090	0	2	0	7.6	1.3
AAN	274	0	1	1.4	-0.4	259	0	2	0	7.4	0.7
AAR	2210	0	2	1.5	-0.3	2194	0	3	1	7.9	1.2
ACA	1321	0	2	2.1	0.0	1362	0	2	1	7.1	0.6
ACI	39	0	0	1.2	0.6	39	0	0	0	7.0	-0.2
ACU	53	0	2	1.3	-1.0	54	0	4	0	7.3	1.3
AEA	263	4	100	4.3	2.2	261	0	7	0	8.7	1.2
AEL	450	0	2	1.5	-0.2	458	0	3	0	7.8	1.3
AFL	303	1	100	2.7	0.7	301	0	9	2	9.6	0.7
AFR	1612	1	5	1.8	-0.3	1629	0	5	0	7.5	1.1
AIC	48	2	13	2.3	1.2	50	0	16	0	12.2	-1.3
AIH	170	0	2	1.6	0.3	173	0	2	0	6.9	1.2
AJJ	69	1	3	2.5	-0.7	82	1	100	0	14.9	-0.1
AMT	612	0	1	1.3	0.2	622	0	1	0	6.5	1.1
AMX	230	0	0	1.4	-0.1	230	0	1	0	8.1	1.3
ANA	846	1	2	1.7	-0.6	840	0	1	0	8.4	1.5
ANZ	3662	1	2	1.9	0.0	3627	0	2	1	8.4	1.2
AOM	667	1	1	1.5	0.6	672	0	2	0	7.6	1.3
ARG	20	0	5	2.4	0.8	20	0	10	0	8.0	0.1
ARP	56	9	20	3.1	-0.1	55	2	22	0	16.5	3.2
AUA	37	3	3	2.2	-0.7	38	0	0	0	8.1	1.8
AVA	375	1	3	1.5	0.1	376	0	4	1	8.8	1.4
AVN	49	2	2	1.2	0.1	49	2	2	0	7.4	-0.7
AZA	485	2	3	1.9	0.0	482	0	4	0	7.9	1.4
BAL	411	1	10	1.4	-0.2	412	0	11	0	7.2	1.5
BAW	1726	1	3	1.9	0.0	1740	0	3	0	7.8	1.2
BBB	55	2	7	1.9	-0.8	57	0	9	0	7.3	2.3
BWA	388	0	2	1.9	0.9	389	0	2	0	7.0	1.8
CAL	2078	0	1	1.5	-0.1	2073	0	3	1	8.0	1.1
CCA	100	2	5	2.1	0.6	100	0	96	2	9.3	1.8
CDN	2622	1	2	1.9	0.2	2619	0	3	1	8.2	1.0
CES	154	0	2	1.5	0.2	155	1	5	0	10.3	1.5
CFC	25	0	8	2.0	-0.9	24	0	8	0	9.1	1.5
CFG	967	1	2	1.8	-0.9	980	0	3	0	8.0	1.2
CKS	131	2	3	1.7	0.3	129	0	3	0	7.8	1.3
CKT	102	0	2	1.4	-0.1	102	0	2	0	7.3	1.3
CLI	258	1	0	2.1	0.4	263	0	2	0	7.3	1.3
CLX	101	0	2	2.1	-0.8	103	0	2	0	9.3	0.4
CMI	1197	2	3	1.7	0.5	1227	0	4	2	7.9	2.1
CMM	329	0	9	1.9	0.2	336	0	9	0	7.0	1.3
COA	916	1	2	1.7	0.7	920	0	1	0	7.3	1.2
CPA	45	0	0	1.3	-0.4	45	0	2	0	5.7	1.6
CRL	487	1	3	1.8	0.5	485	0	4	1	7.3	1.7
CSA	41	0	0	2.2	-0.8	41	0	2	0	8.1	1.8
CTM	133	1	12	2.6	-1.5	136	0	13	0	9.1	2.8
CUB	409	2	11	2.7	1.3	405	0	100	1	11.2	3.0
DAF	26	0	4	2.2	0.0	27	0	0	0	6.9	0.3
DAL	6180	0	1	1.8	0.5	5991	0	2	0	7.7	1.0
DHL	453	3	100	3.8	-1.8	455	0	3	0	8.5	1.4
DLH	3198	0	8	2.0	0.2	3207	0	12	4	7.6	0.9
DOA	286	3	15	1.5	0.5	289	0	13	0	7.4	1.4
EIA	59	2	3	1.5	-0.3	60	0	5	0	7.9	0.4
EIN	37	3	22	2.5	-1.5	37	0	22	0	10.4	1.3
ELY	156	2	4	1.7	-0.2	160	1	7	0	7.9	0.8
EVA	1880	1	2	1.7	-0.7	1873	0	2	0	7.7	1.0
EWW	23	9	9	2.3	-0.2	24	0	13	0	12.1	1.9
FDX	865	1	2	1.6	0.3	876	0	3	0	8.1	0.6
FIN	642	0	2	1.8	0.5	643	0	3	2	7.4	1.2

		TEMPERATURE					WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
FJI	663	2	3	1.5	0.7	656	0	2	0	8.8	0.8
FKC	21	0	0	3.7	-2.1	20	0	0	0	9.1	0.5
FMN	27	0	0	1.6	0.7	26	0	0	0	6.8	0.5
GAF	146	1	3	2.4	0.3	147	0	3	2	7.6	0.8
GFA	20	0	0	1.4	-0.2	23	0	0	0	7.6	0.9
GHA	25	0	0	1.3	0.8	25	0	0	0	6.0	1.9
GIA	238	3	3	1.8	0.4	239	0	0	0	7.8	1.5
HAL	1434	0	1	1.2	0.2	1435	0	2	1	6.8	1.3
HLF	151	1	1	1.8	-0.7	147	0	1	1	6.7	0.7
HRH	53	0	4	1.4	0.4	52	0	2	0	7.4	0.2
IBE	3025	2	14	1.6	0.4	3006	0	15	0	8.1	0.8
ICE	426	0	0	1.6	-0.2	425	0	3	2	7.4	1.1
JAA	44	5	2	1.8	0.4	44	0	5	0	8.1	0.6
JAL	6910	0	1	1.6	0.0	6903	0	2	1	8.0	1.3
JAZ	64	2	2	1.4	1.0	63	0	2	2	6.0	1.0
KAC	24	0	0	1.5	-0.7	24	0	13	0	8.9	0.4
KAL	3998	1	1	1.8	0.1	3987	0	2	0	8.3	1.1
KIC	21	5	5	1.5	0.1	20	0	0	0	5.9	0.1
KIW	26	4	12	3.1	2.1	25	0	4	0	7.8	0.8
KLM	2664	0	2	1.8	0.1	2658	0	3	0	7.7	0.9
LDA	137	0	2	1.7	-1.0	139	0	4	1	6.7	0.8
LDI	262	0	3	2.1	-1.3	259	0	3	0	7.7	0.7
LIB	466	0	1	1.5	0.6	467	0	4	3	7.6	1.3
LOT	588	1	2	2.0	-0.4	592	0	2	0	7.3	1.1
LTU	905	1	4	1.6	0.4	872	0	6	1	7.9	1.3
MAH	36	3	3	2.6	-0.8	36	0	6	0	9.6	-0.8
MAS	296	2	4	1.8	-0.3	297	0	4	0	10.1	1.3
MDA	191	0	1	1.7	-0.9	191	0	4	1	10.9	-0.5
MJD	22	0	5	2.6	-1.3	22	0	27	0	16.2	1.3
MKD	38	3	0	1.4	-0.1	38	0	0	0	7.9	1.2
MPH	781	0	1	1.9	-0.5	781	0	1	0	7.3	0.8
MRS	64	3	11	3.4	-1.9	64	0	19	3	10.8	2.3
NCA	603	1	1	1.6	0.4	599	0	1	0	7.5	0.6
NGA	101	1	1	1.7	0.2	102	0	100	0	12.5	0.7
NWA	10434	1	2	2.1	0.7	10432	0	3	1	7.9	1.2
OAL	32	0	0	1.8	0.3	33	0	0	0	7.8	1.9
PAC	76	1	3	1.8	0.7	77	0	3	0	7.8	0.3
PAL	1072	1	1	1.4	-0.5	1071	0	3	1	8.1	1.1
PAO	193	2	3	1.6	0.1	194	1	2	0	8.7	0.7
PIA	25	0	0	2.2	-0.6	25	0	0	0	8.0	0.8
PNL	92	1	1	2.3	1.1	91	1	3	0	12.2	0.2
QFA	1910	1	3	1.8	0.4	1896	0	2	0	7.8	1.1
RAF	180	0	0	1.4	0.4	179	0	2	0	9.7	2.4
RAT	26	0	0	1.6	-1.2	29	0	0	0	7.6	2.3
RBA	21	5	5	1.4	0.0	21	0	5	0	9.5	1.3
RIA	284	2	13	3.1	1.8	291	0	10	0	10.6	2.2
RJA	54	0	6	2.7	0.6	58	0	3	0	8.8	0.8
RKA	21	0	0	1.4	-0.6	23	0	0	0	4.8	1.2
RON	54	2	2	1.1	0.3	52	2	2	0	5.8	0.6
RRR	259	1	20	2.1	-0.4	262	0	23	0	10.3	2.2
SAA	200	2	4	1.6	-0.6	201	0	2	1	6.4	1.5
SAB	51	0	0	1.4	-0.1	50	0	0	0	9.5	0.5
SAS	1535	0	1	1.9	-0.2	1537	0	2	1	7.1	1.1
SIA	1354	1	2	1.6	-0.7	1359	0	3	1	8.6	1.5
SJM	25	4	4	2.0	0.1	24	0	4	0	5.7	-0.3
SOL	52	2	2	1.0	0.4	51	2	4	0	7.3	0.0
SPP	362	1	7	1.2	-0.1	354	0	8	0	8.0	1.2
SVA	196	5	11	2.2	0.8	204	0	8	0	7.3	0.8
SVV	21	5	10	3.7	2.2	21	0	19	5	12.8	7.7

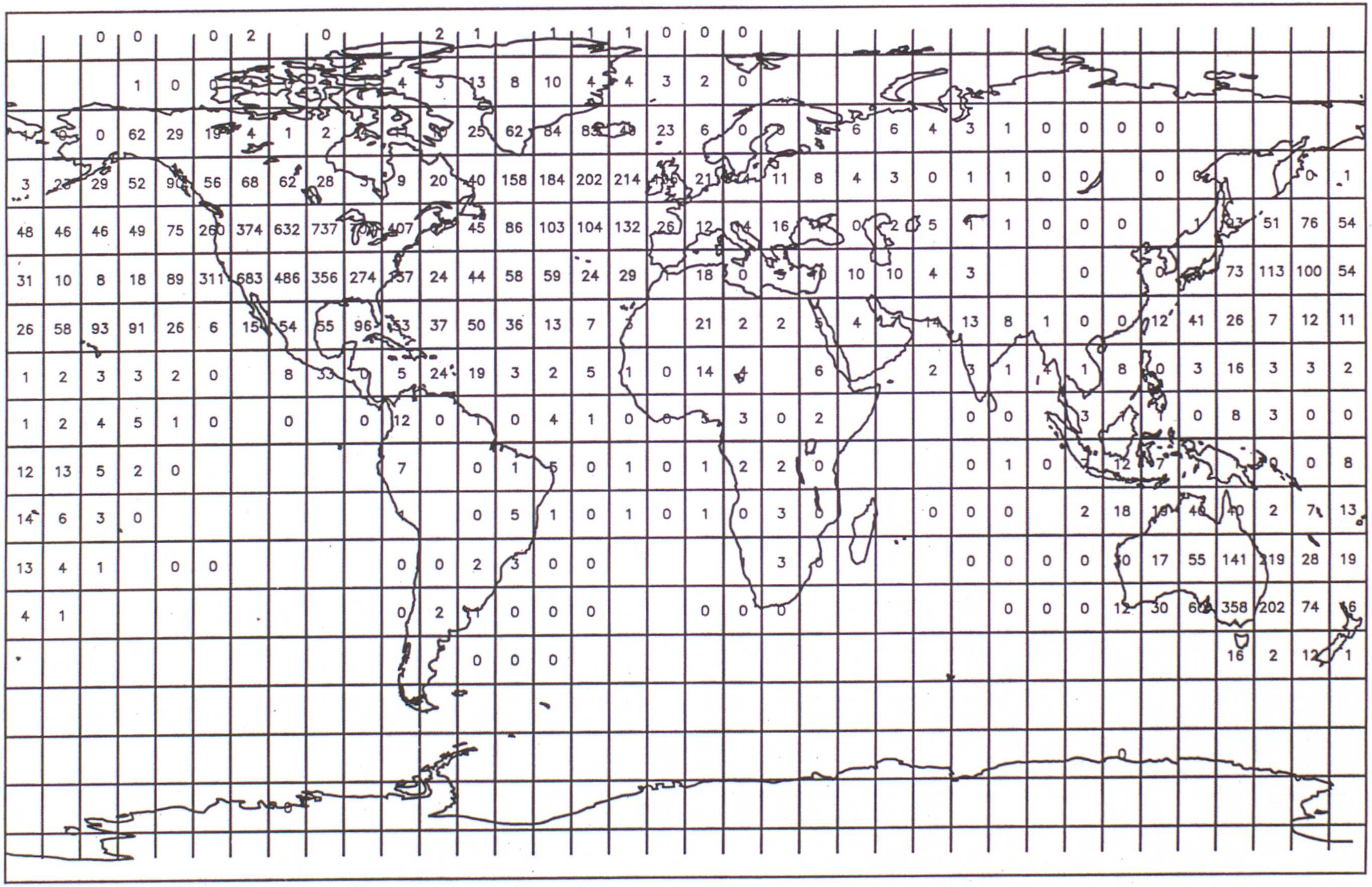
	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
SWR	156	1	2	1.5	0.3	159	0	1	0	7.8	1.7
TAP	969	1	7	1.7	-0.2	965	0	7	0	8.5	1.3
TDX	20	0	0	1.0	0.5	20	0	10	10	7.7	2.3
TEJ	74	1	19	1.7	0.1	73	0	18	0	9.0	0.3
THA	325	0	1	1.7	-0.7	325	0	3	0	9.0	1.5
TOW	202	1	1	1.7	0.2	210	0	1	0	7.8	1.1
TSC	219	3	5	2.4	0.8	219	0	5	0	9.2	1.6
TWA	1805	1	2	1.9	-0.1	1804	0	4	0	8.5	1.4
UAL	97167	1	2	1.2	0.2	97224	0	2	0	6.3	0.8
ULE	169	1	1	1.3	0.0	164	0	3	0	8.5	1.8
UPS	895	2	11	1.6	-0.2	913	0	11	0	7.8	1.1
USA	213	0	4	1.8	-0.2	217	0	4	0	7.4	2.0
VIA	672	1	2	1.6	0.6	670	0	3	1	6.7	1.4
VIR	250	0	3	1.7	-0.5	252	0	5	0	9.8	2.0
VRG	86	3	3	1.7	0.5	88	0	3	0	10.6	2.0
VSP	112	0	0	1.4	0.6	115	0	1	1	8.6	1.1
WOA	115	0	2	1.6	0.2	114	0	3	0	8.2	1.3
AN	27196	0	1	1.4	0.0	26993	0	1	0	7.5	0.4
BA	17928	0	26	1.5	0.5	17906	0	26	0	7.2	1.1
DL	1079	0	99	2.2	0.9	1079	2	99	0	24.5	1.3
FJ	21	0	0	1.3	0.5	21	0	0	0	9.7	-1.1
KL	11641	0	29	1.9	1.3	11632	0	10	0	7.0	1.2
LH	3103	0	4	1.6	0.1	3079	0	5	1	6.7	1.3
NW	54661	0	1	1.4	0.1	54661	0	1	0	6.0	0.9
QF	5747	0	1	1.2	0.3	5746	0	1	0	6.7	0.8
M	283	4	97	3.1	0.7	279	0	97	1	11.7	3.2
N	332	4	7	2.4	0.5	345	0	5	0	8.9	1.3

MEAN DAILY COUNT OF AIRCRAFT 70 – 500 HPA

JULY 1995

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3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26 58 93 91 26 6 15 54 55 96 153 37 50 36 13 7 3 21 2 2 5 4 7 14 13 8 1 0 0 12 41 26 7 12 11
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14 6 3 0 1 0 5 1 0 1 0 1 0 3 0 0 0 0 2 18 19 46 40 2 7 13
13 4 1 0 0 0 0 2 3 0 0 3 0 0 0 0 0 10 17 55 141 219 28 19
4 1 0 2 1 0 0 0 0 0 0 0 0 0 12 30 60 358 202 74 16
0 0 0 16 2 12 1

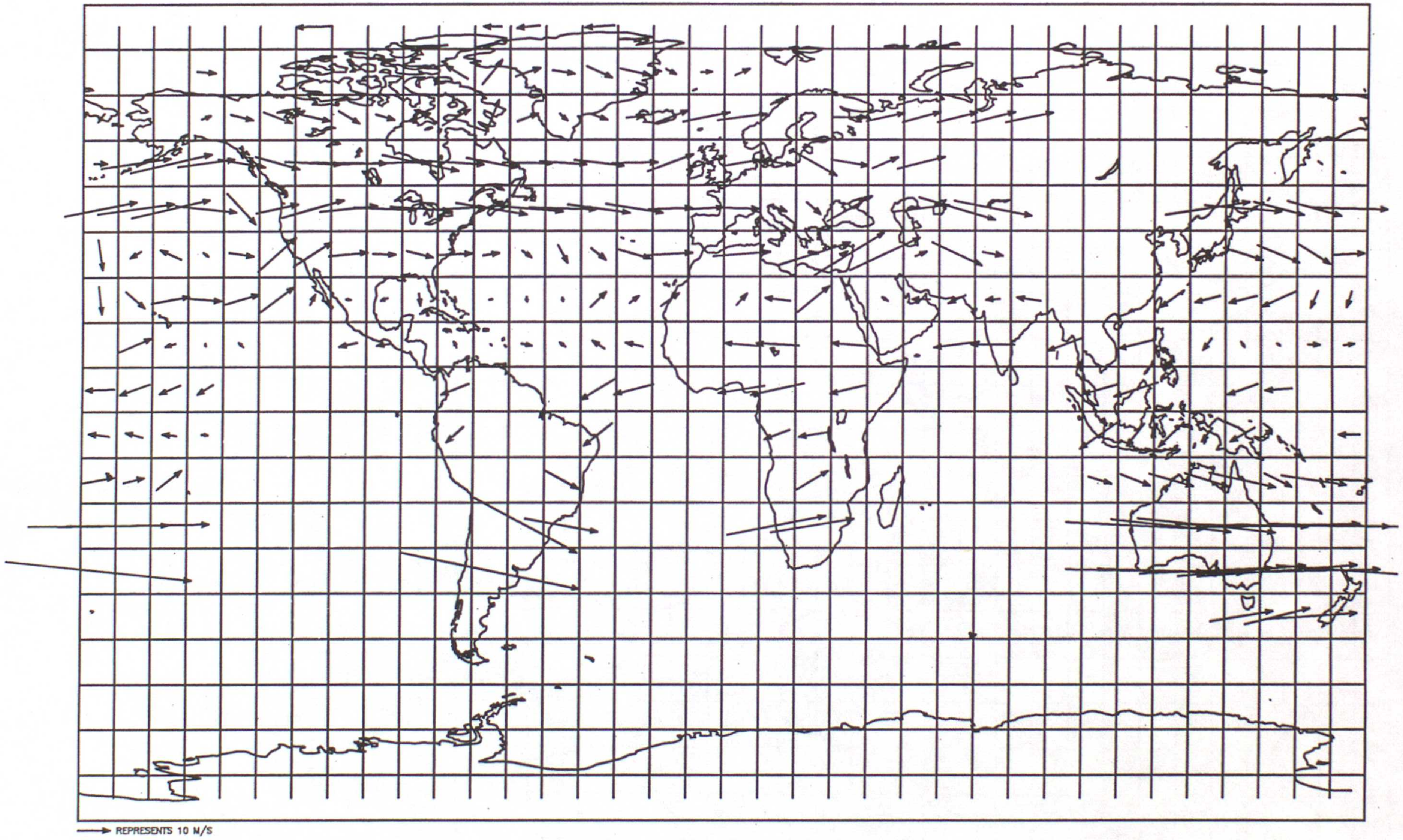
AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

FIGURE 4

JULY 1995

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



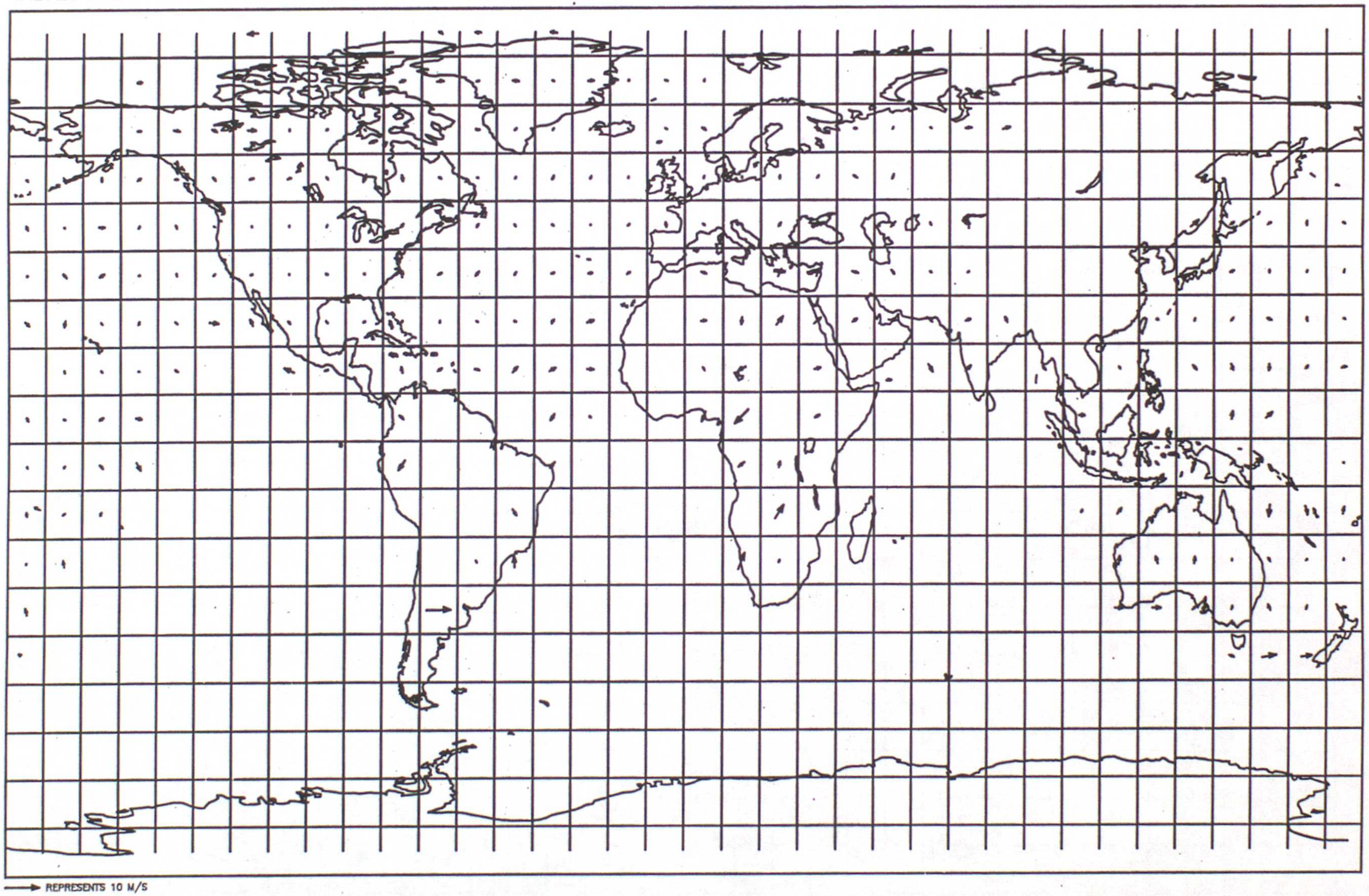
AIRCRAFT MEAN O–B WINDS BETWEEN 70 AND 500 HPA

FIGURE 5

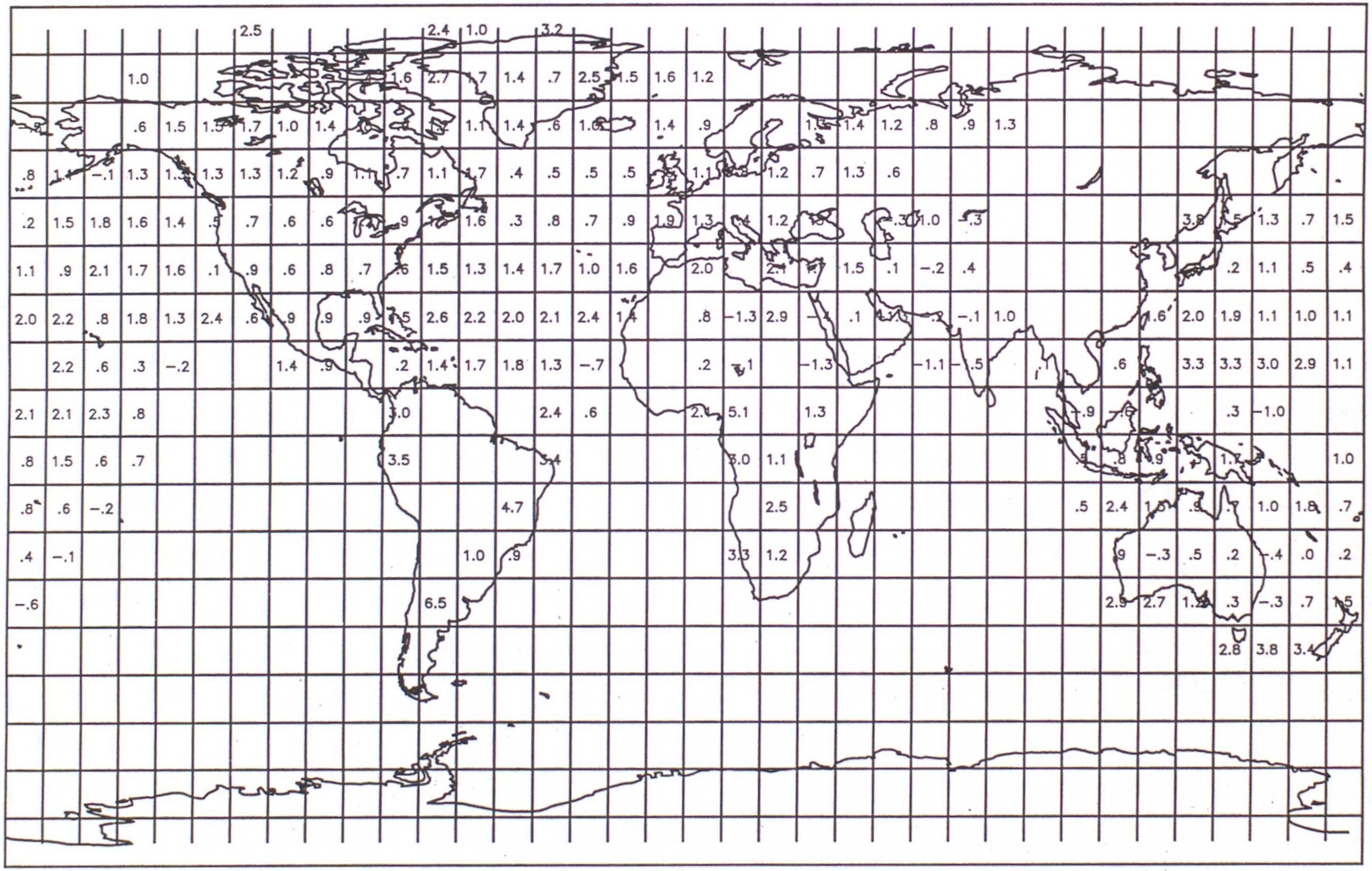
JULY 1995

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT : MEAN O–B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
JULY 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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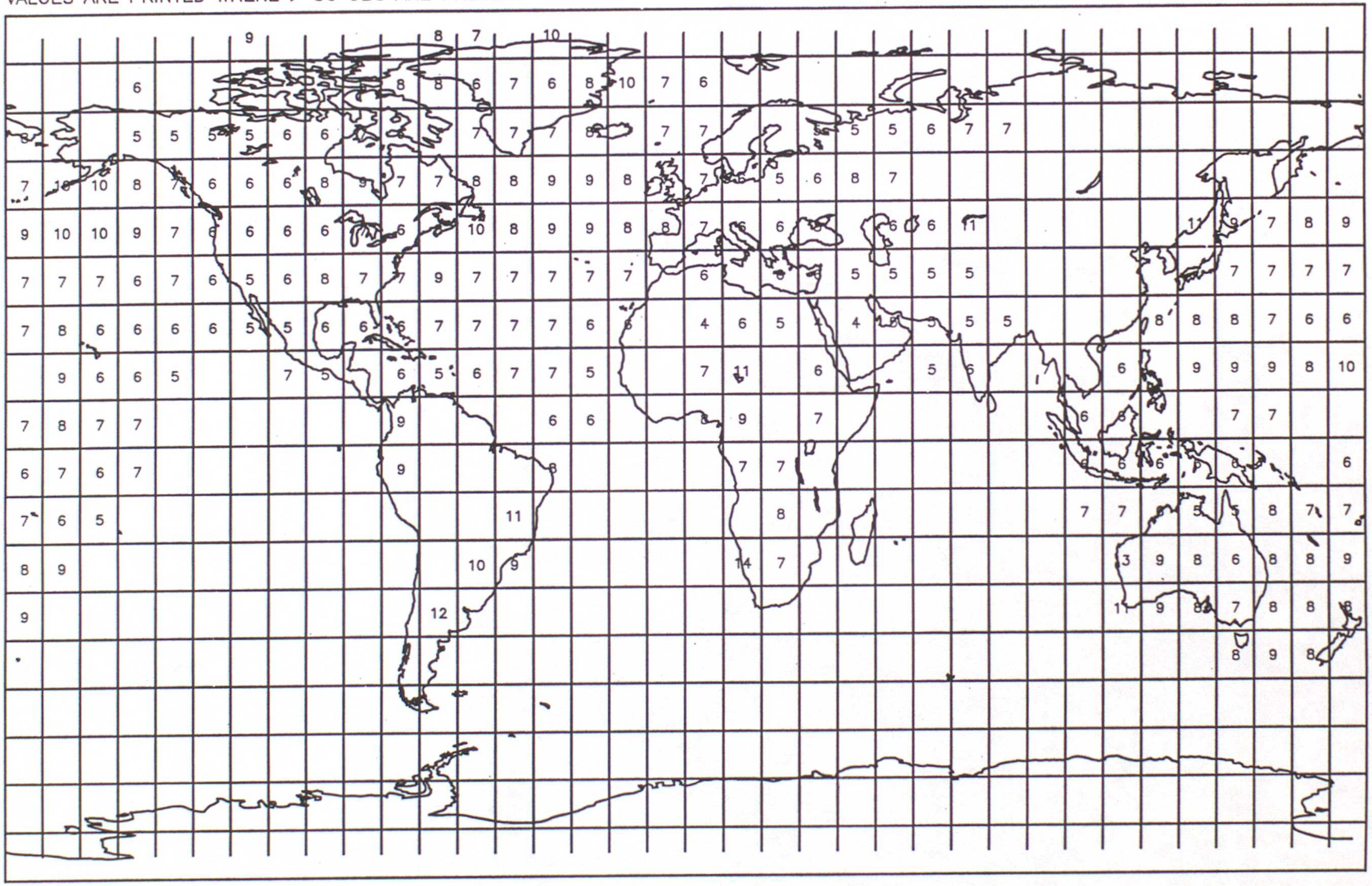
.6 1.5 1.5 1.7 1.0 1.4 1.1 1.4 .6 1.6 1.4 .9 1.5 1.4 1.2 .8 .9 1.3
.8 1.4 –.1 1.3 1.3 1.3 1.3 1.2 .9 1.1 .7 1.1 1.7 .4 .5 .5 .5 1.1 1.2 .7 1.3 .6
.2 1.5 1.8 1.6 1.4 .5 .7 .6 .6 .9 1.6 .3 .8 .7 .9 1.9 1.3 1.2 –.3 1.0 –.3 3.8 .5 1.3 .7 1.5
1.1 .9 2.1 1.7 1.6 .1 .9 .6 .8 .7 .6 1.5 1.3 1.4 1.7 1.0 1.6 2.0 2.1 1.7 1.5 .1 –.2 .4 .2 1.1 .5 .4
2.0 2.2 .8 1.8 1.3 2.4 .6 .9 .9 .9 .5 2.6 2.2 2.0 2.1 2.4 1.4 .8 –1.3 2.9 .1 –.1 1.0 .6 2.0 1.9 1.1 1.0 1.1
2.2 .6 .3 –.2 1.4 .9 .2 1.4 1.7 1.8 1.3 –.7 .2 .1 –1.3 –1.1 –.5 .6 3.3 3.3 3.0 2.9 1.1
2.1 2.1 2.3 .8 3.0 2.4 .6 2.1 5.1 1.3 .9 .3 –1.0
.8 1.5 .6 .7 3.5 3.4 3.0 1.1 .8 .9 1.7 1.0
.8 .6 –.2 4.7 2.5 .5 2.4 1.5 .9 .7 1.0 1.8 .7
.4 –.1 1.0 .9 3.3 1.2 .9 –.3 .5 .2 .4 .0 .2
–.6 6.5 2.9 2.7 1.2 .3 –.3 .7 1.5
2.8 3.8 3.4

AIRCRAFT : RMS O–B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
JULY 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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9 10 10 9 7 6 6 6 6 6 10 8 9 9 8 8 7 6 6 6 6 6 11 11 9 7 8 9
7 7 7 6 7 6 5 6 8 7 7 9 7 7 7 7 7 6 6 8 5 5 5 5 7 7 7 7
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9 6 6 5 7 5 6 5 6 7 7 5 7 11 6 5 6 6 9 9 9 8 10
7 8 7 7 9 6 6 8 9 7 6 8 7 7
6 7 6 7 9 8 7 7 6 6 6 8 6
7 6 5 11 8 7 7 5 5 8 7 7
8 9 10 9 14 7 3 9 8 6 8 8 9
9 12 11 9 8 7 8 8 8
8 9 8

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

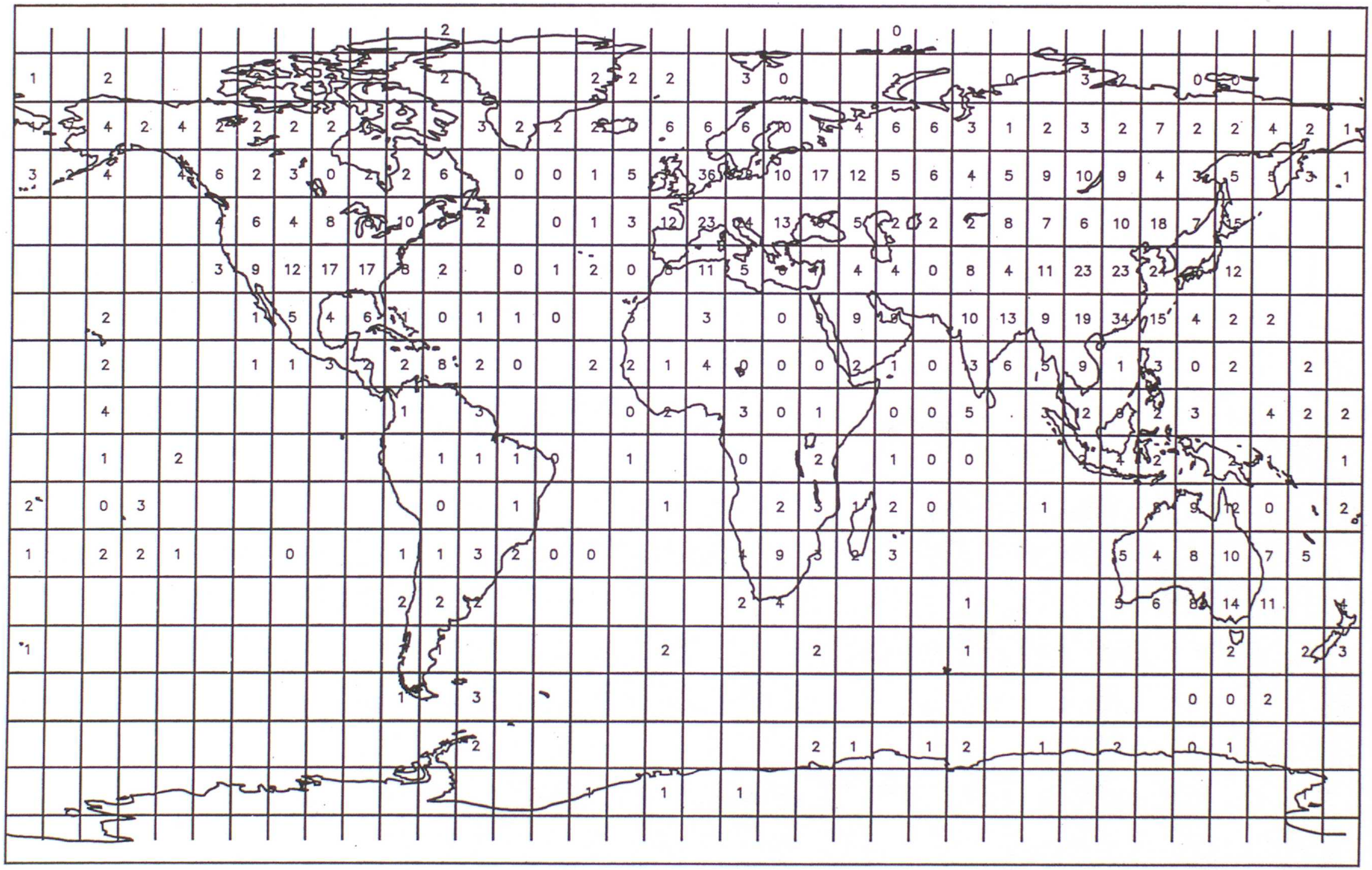
Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 30.0 hPa
Element monitored		:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1	
SELECTION CRITERIA	:≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.	

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
15480	00	Z	250	44/ 29	20	1	100.1	8.9	100.5	8
25399	00	Z	250	66/-170	18	1	58.8	63.3	86.4	5
25399	12	Z	250	66/-170	13	2	74.7	94.2	120.2	8
26258	00	Z	200	58/ 28	26	3	69.3	122.2	140.5	9
33837	00	Z	50	46/ 31	11	1	73.5	135.0	153.7	4
41594	00	Z	500	32/ 73	21	0	29.1	-60.4	67.1	8
42027	00	Z	250	34/ 75	21	0	72.0	-70.1	100.5	7
42027	12	Z	150	34/ 75	15	1	111.9	-38.1	118.2	4
42101	00	Z	700	30/ 76	25	0	28.0	-26.2	38.4	4
42182	00	Z	100	29/ 77	18	4	132.1	-104.7	168.5	7
42182	12	Z	50	29/ 77	15	0	111.9	120.1	164.1	4
42314	00	Z	200	27/ 95	10	1	66.6	-99.5	119.8	4
42314	12	Z	200	27/ 95	12	0	78.4	-111.4	136.3	5
42339	00	Z	200	26/ 73	13	5	94.8	-143.1	171.6	7
42339	12	Z	150	26/ 73	11	5	117.5	-110.2	161.1	7
42361	00	Z	250	26/ 78	21	1	73.7	-80.5	109.2	8
42361	12	Z	200	26/ 78	17	3	86.8	-56.4	103.5	7
42369	00	Z	200	27/ 81	21	2	86.9	-37.0	94.4	7
42369	12	Z	70	27/ 81	12	0	194.4	103.9	220.5	4
42379	00	Z	50	27/ 83	19	2	135.9	106.3	172.5	10
42379	12	Z	30	27/ 83	10	1	128.2	232.4	265.4	10
42397	00	Z	200	27/ 88	9	1	69.2	-112.7	132.2	6
42397	12	Z	200	27/ 88	8	3	90.0	-121.7	151.4	8
42492	00	Z	200	26/ 85	24	0	84.7	-56.7	101.9	5
42492	12	Z	100	26/ 85	14	0	128.8	-83.9	153.7	5
42647	00	Z	200	23/ 73	23	0	78.5	-106.0	131.9	5
42701	12	Z	100	23/ 85	11	2	131.1	-10.2	131.5	7
42724	00	Z	50	24/ 91	14	0	163.5	111.1	197.7	6
42724	12	Z	150	24/ 91	16	1	140.7	-94.3	169.4	6
42809	00	Z	150	23/ 88	17	0	110.3	-72.2	131.8	4
42809	12	Z	200	23/ 88	26	0	96.2	-46.8	107.0	5
42867	00	Z	100	21/ 79	23	1	102.5	-91.9	137.7	4
42867	12	Z	30	21/ 79	11	0	92.4	188.1	209.6	5
42971	00	Z	100	20/ 86	23	1	112.9	-37.9	119.1	6
42971	12	Z	150	20/ 86	19	2	112.6	-32.5	117.2	5
43003	00	Z	150	19/ 73	14	1	93.7	-97.3	135.1	4
43014	00	Z	200	20/ 75	21	0	119.2	-24.9	121.7	5
43014	12	Z	150	20/ 75	14	0	136.7	-13.0	137.4	4
43041	00	Z	150	19/ 82	15	0	120.7	-22.1	122.7	4
43041	12	Z	150	19/ 82	13	0	82.0	-76.4	112.1	4
43128	00	Z	200	17/ 78	19	0	93.8	-61.4	112.1	6
43150	00	Z	200	18/ 83	18	1	82.9	-95.9	126.8	7
43150	12	Z	200	18/ 83	20	0	62.4	-83.9	104.5	6
43185	00	Z	200	16/ 81	24	0	69.9	-76.3	103.5	5
43185	12	Z	150	16/ 81	19	0	103.2	-76.3	128.4	5
43192	00	Z	200	15/ 74	17	0	90.2	-87.8	125.9	7
43279	00	Z	70	13/ 80	11	0	123.6	-56.1	135.8	4
43279	12	Z	250	13/ 80	28	0	68.2	-67.6	96.0	9
43285	00	Z	250	13/ 75	14	0	61.1	-108.6	124.7	6
43285	12	Z	200	13/ 75	15	0	101.0	-27.0	104.6	4
43333	12	Z	250	12/ 93	15	0	67.6	-61.9	91.7	4
43353	00	Z	100	10/ 76	12	1	103.1	-117.2	156.1	4
43353	12	Z	200	10/ 76	21	1	97.3	-38.8	104.8	5
43369	00	Z	70	8/ 73	18	1	108.2	-122.1	163.1	8
43369	12	Z	50	8/ 73	10	0	148.5	70.7	164.5	6
43371	12	Z	100	8/ 77	9	2	76.7	-152.7	170.9	6
44373	12	Z	150	44/ 104	9	1	44.7	220.3	224.8	5
50527	00	Z	70	49/ 120	29	0	56.0	121.6	133.8	4
50527	12	Z	70	49/ 120	27	0	91.3	105.9	139.8	5
52267	12	Z	70	42/ 101	26	0	38.3	131.1	136.6	4

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
52836	12	Z	100	36/ 98	19	0	52.9	118.5	129.8	4
53915	12	Z	70	36/ 107	30	0	36.2	123.8	128.9	4
54135	00	Z	70	44/ 122	26	1	71.8	165.8	180.7	8
54135	12	Z	70	44/ 122	27	1	74.3	166.9	182.7	7
54337	00	Z	150	41/ 121	13	1	39.4	88.8	97.2	5
54342	00	Z	150	42/ 123	28	0	31.8	87.7	93.3	5
54497	00	Z	70	40/ 124	29	0	47.9	156.2	163.4	8
54497	12	Z	70	40/ 124	28	0	69.4	136.1	152.8	6
56080	00	Z	150	35/ 103	29	0	21.9	92.7	95.3	4
56080	12	Z	30	35/ 103	21	0	35.0	197.5	200.6	6
56146	12	Z	100	32/ 100	22	0	38.4	122.5	128.4	5
56294	12	Z	30	31/ 104	17	0	47.5	193.8	199.5	5
56691	00	Z	100	27/ 104	25	0	39.7	123.4	129.6	6
56691	12	Z	100	27/ 104	25	0	34.6	128.9	133.4	5
56739	12	Z	100	25/ 98	30	0	36.1	115.5	121.0	5
56964	12	Z	30	23/ 101	12	1	55.6	204.2	211.6	4
56985	12	Z	70	23/ 103	27	0	42.2	137.7	144.1	5
57127	12	Z	70	33/ 107	26	0	28.1	138.4	141.2	5
57516	12	Z	100	30/ 106	27	0	43.8	142.8	149.4	6
57679	00	Z	100	28/ 113	27	0	42.0	138.3	144.5	5
57679	12	Z	70	28/ 113	16	1	44.9	139.4	146.4	5
57749	00	Z	100	28/ 110	29	0	30.6	126.4	130.0	5
57749	12	Z	100	28/ 110	27	0	45.3	102.1	111.7	4
57957	12	Z	100	25/ 110	26	0	43.6	122.8	130.3	4
58633	00	Z	100	29/ 119	26	0	48.6	116.6	126.3	5
58665	00	Z	70	29/ 121	28	0	45.8	140.0	147.3	5
58665	12	Z	70	29/ 121	28	0	36.8	141.1	145.8	5
58847	00	Z	100	26/ 119	28	0	47.6	114.3	123.8	5
59287	00	Z	100	23/ 113	20	2	45.6	141.0	148.2	4
62306	00	Z	70	31/ 27	15	0	77.2	219.7	232.9	5
62306	12	Z	50	31/ 27	4	14	9.3	364.0	364.1	9
62378	12	Z	50	30/ 31	11	9	64.5	317.9	324.4	7
63450	12	Z	700	9/ 39	18	0	5.8	57.7	58.0	7
71203	00	Z	1000	50/ -12	21	6	53.6	-15.8	55.9	9
71203	12	Z	1000	50/ -12	23	6	51.9	-10.6	53.0	9
74455	00	Z	200	48/ -91	24	4	52.4	157.6	166.1	9
74455	12	Z	200	48/ -91	24	4	49.6	157.1	164.8	8
82332	12	Z	30	-3/ -60	22	0	37.2	207.3	210.6	6
89050	00	Z	70	-62/ -59	19	1	80.6	229.9	243.7	10
89642	00	Z	850	-67/ 140	23	0	30.9	26.6	40.7	5
96163	00	Z	150	-1/ 100	19	1	122.1	-27.3	125.2	6
96237	00	Z	100	-2/ 106	20	0	110.9	35.2	116.4	4
97014	00	Z	1000	2/ 125	21	2	36.7	-13.7	39.1	4

AVAILABILITY – TEMP – 500 HPA GEOPOTENTIAL – JULY 1995 FIGURE 8
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1406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4 6 4 8 10 2 0 1 3 12 23 24 13 5 2 2 2 8 7 6 10 18 7 15
3 9 12 17 17 8 2 0 1 2 0 11 5 4 4 0 8 4 11 23 23 24 12
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4 1 3 0 2 3 0 1 0 0 5 3 12 8 2 3 4 2 2
1 2 1 1 1 0 1 0 2 1 0 0 4 2 1 1
2 0 3 0 1 1 2 3 1 2 0 1 8 9 12 0 2
1 2 2 1 0 1 1 3 2 0 0 4 9 3 2 3 5 4 8 10 7 5
2 2 2 2 4 1 5 6 8 14 11 4
1 2 2 1 2 2 3
1 3 0 0 2
2 2 1 1 2 1 2 0 1
1 1 1

TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 100.0 hPa

Element monitored :VECTOR WIND in m s^{-1}

Parameters monitored

- :NUM OBS :Number of observations available at level shown during period.
- :NUM GROSS :Number of gross errors at level shown during period.
- :% REJ :Percentage of observations rejected by quality control at level shown during period.
- :UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
- :RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
- :NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.2

SELECTION CRITERIA :$\geq$ 10 observations and $\geq$ 15 m s^{-1} RMS vector wind.

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
41316	00	V	150	17/ 54	15	0	26	22.8	-2.8	15.1	1
60571	12	V	150	32/ -2	11	0	27	9.8	-5.2	17.5	1
71203	00	V	250	50/ -12	30	0	53	8.7	-3.1	19.5	3
71203	12	V	250	50/ -12	31	0	58	9.2	-6.5	19.8	3
74455	00	V	200	48/ -91	27	0	25	-5.1	-0.1	17.0	2
74455	12	V	250	48/ -91	26	0	15	-3.9	2.4	15.9	2
83612	00	V	150	-20/ -55	15	0	13	3.2	-1.9	16.9	1

AVAILABILITY – TEMP/PILOT – 300 HPA WIND – JULY 1995

FIGURE 9

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1265

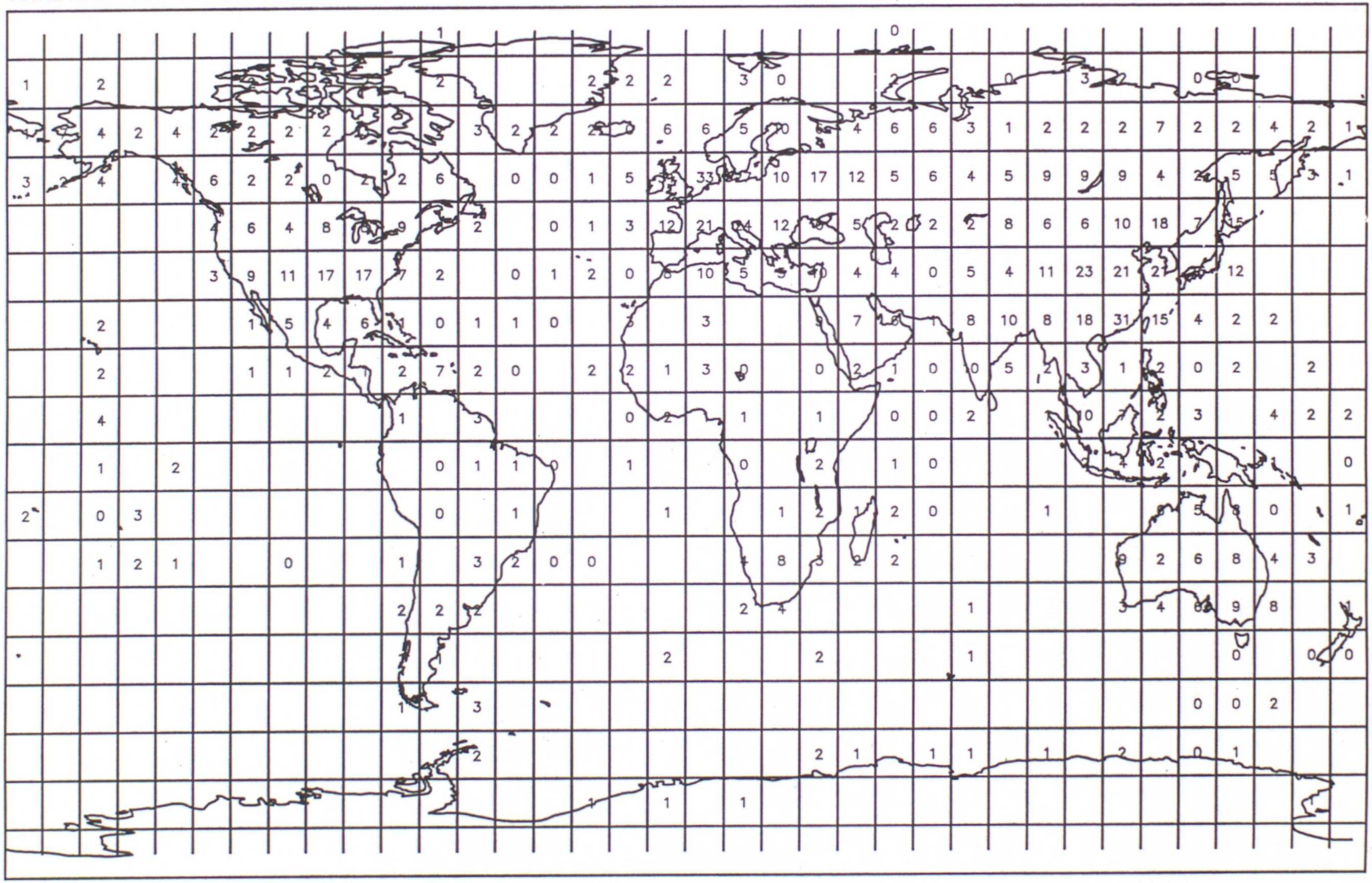

1 0
1 2 2 2 2 2 3 0 2 0 3 0 0
4 2 4 2 2 2 2 3 2 2 2 6 6 5 10 6 4 6 6 3 1 2 2 2 7 2 2 4 2 1
3 2 4 4 6 2 2 0 2 2 6 0 0 1 5 33 10 17 12 5 6 4 5 9 9 9 4 2 5 5 3 1
4 6 4 8 9 2 0 1 3 12 21 24 12 5 2 2 2 8 6 6 10 18 7 15
3 9 11 17 17 7 2 0 1 2 0 8 10 5 5 10 4 4 0 5 4 11 23 21 21 12
2 1 5 4 6 1 0 1 1 0 3 3 7 8 1 8 10 8 18 31 15 4 2 2
2 1 1 2 2 7 2 0 2 2 1 3 0 0 2 1 0 10 5 2 3 1 2 0 2 2
4 1 3 0 2 1 1 0 0 2 10 2 3 4 2 2
1 2 0 1 1 0 1 0 2 1 0 4 2 0
2 0 3 0 1 1 1 2 1 2 0 1 8 5 8 0 1
1 2 1 0 1 3 2 0 0 4 8 3 2 2 9 2 6 8 4 3
2 2 2 2 4 1 3 4 6 9 8 1
2 2 1 0 0 0
1 3 0 0 2
2 2 1 1 1 1 2 0 1
1 1 1 1

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 500.0 - 150.0 hPa
Element monitored		:WIND DIRECTION in degrees
Parameters monitored		
	:NUM OBS	:Average number of observations at all levels.
	:BIAS	:Mean difference of observations from background values from all levels.
	:MAX SPREAD	:(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
	:SD	:SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS $\geq$ 5, and

ABSOLUTE BIAS $\geq$ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
10828	12	DD	48/ 9	10	11.4	2.8	12.8
42339	00	DD	26/ 73	10	12.5	6.3	20.2
42369	00	DD	27/ 81	11	13.6	7.5	20.7
52889	12	DD	36/ 104	27	-10.3	8.3	19.6
53614	00	DD	38/ 106	27	-11.5	8.3	14.9
53614	12	DD	38/ 106	26	-11.1	5.2	12.8
56080	12	DD	35/ 103	25	-13.1	9.5	22.5
56691	00	DD	27/ 104	17	-10.9	6.5	24.8
59134	00	DD	24/ 118	16	10.8	5.4	18.1
59431	12	DD	23/ 108	16	11.0	7.9	19.9
65578	00	DD	5/ -4	16	-10.4	5.8	19.8
71853	12	DD	50/-100	15	14.0	5.0	13.0

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer:701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

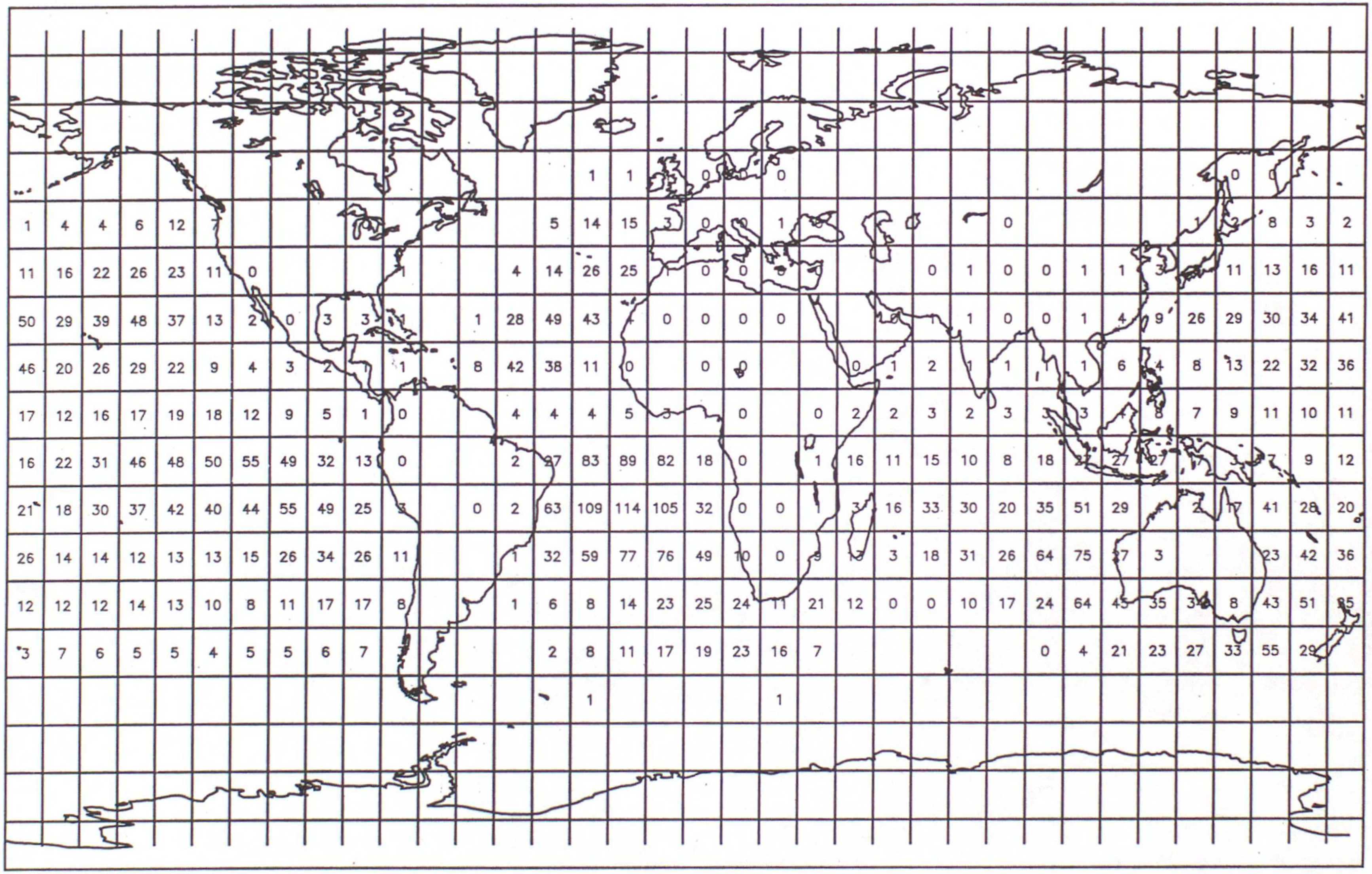
:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

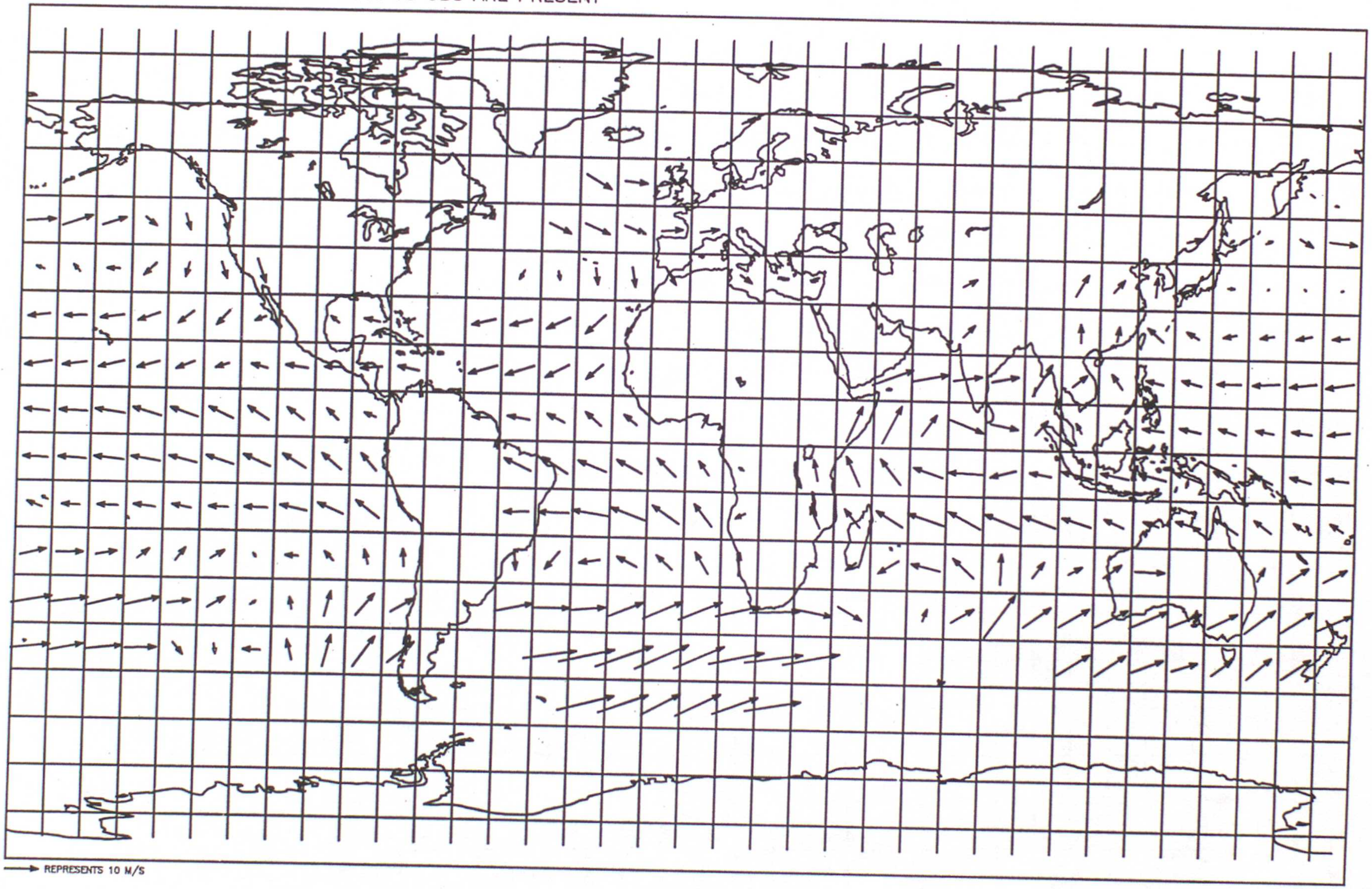
:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
JULY 1995


1 1 0 0 0 0 0
1 4 4 6 12 7 5 14 15 3 0 0 1 0 0 1 2 8 3 2
11 16 22 26 23 11 0 1 4 14 26 25 1 0 0 0 0 0 1 0 0 1 1 3 11 13 16 11
50 29 39 48 37 13 2 0 3 3 1 1 28 49 43 4 0 0 0 0 0 1 1 0 0 1 4 9 26 29 30 34 41
46 20 26 29 22 9 4 3 2 1 1 8 42 38 11 0 0 0 0 1 2 1 1 1 1 6 4 8 13 22 32 36
17 12 16 17 19 18 12 9 5 1 0 4 4 4 5 3 0 0 2 2 3 2 3 3 3 4 8 7 9 11 10 11
16 22 31 46 48 50 55 49 32 13 0 2 27 83 89 82 18 0 1 16 11 15 10 8 18 27 27 27 17 3 7 9 12
21 18 30 37 42 40 44 55 49 25 3 0 2 63 109 114 105 32 0 0 1 3 16 33 30 20 35 51 29 4 2 17 41 28 20
26 14 14 12 13 13 15 26 34 26 11 1 32 59 77 76 49 10 0 9 13 3 18 31 26 64 75 27 3 23 42 36
12 12 12 14 13 10 8 11 17 17 8 1 6 8 14 23 25 24 11 21 12 0 0 10 17 24 64 45 35 34 8 43 51 35
3 7 6 5 5 4 5 5 6 7 7 2 8 11 17 19 23 16 7 0 4 21 23 27 33 55 29
1 1

SATOB VECTOR MEAN WINDS BETWEEN 701–1000 HPA
JULY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 11


REPRESENTS 10 M/S

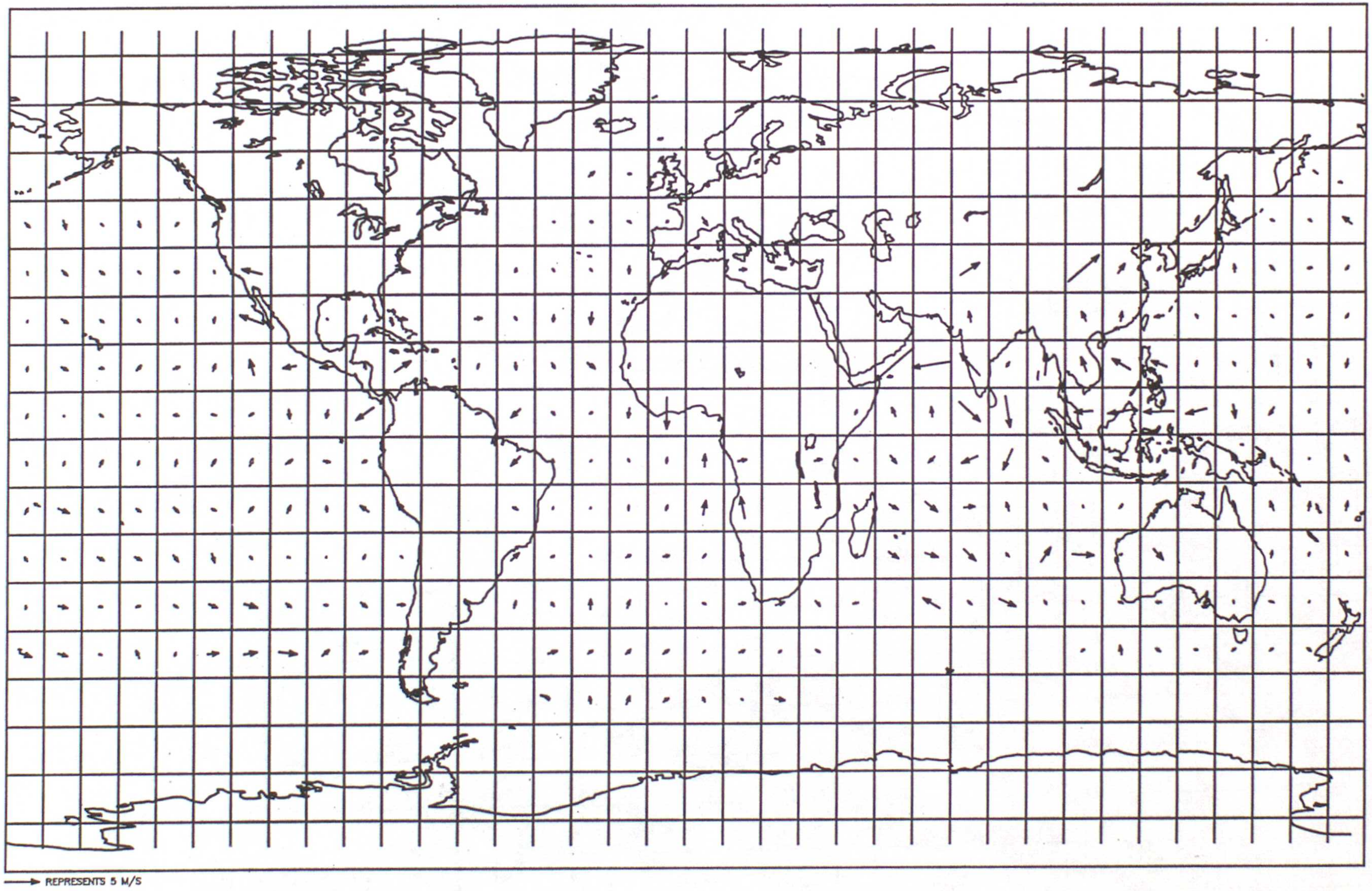
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA

JULY 1995

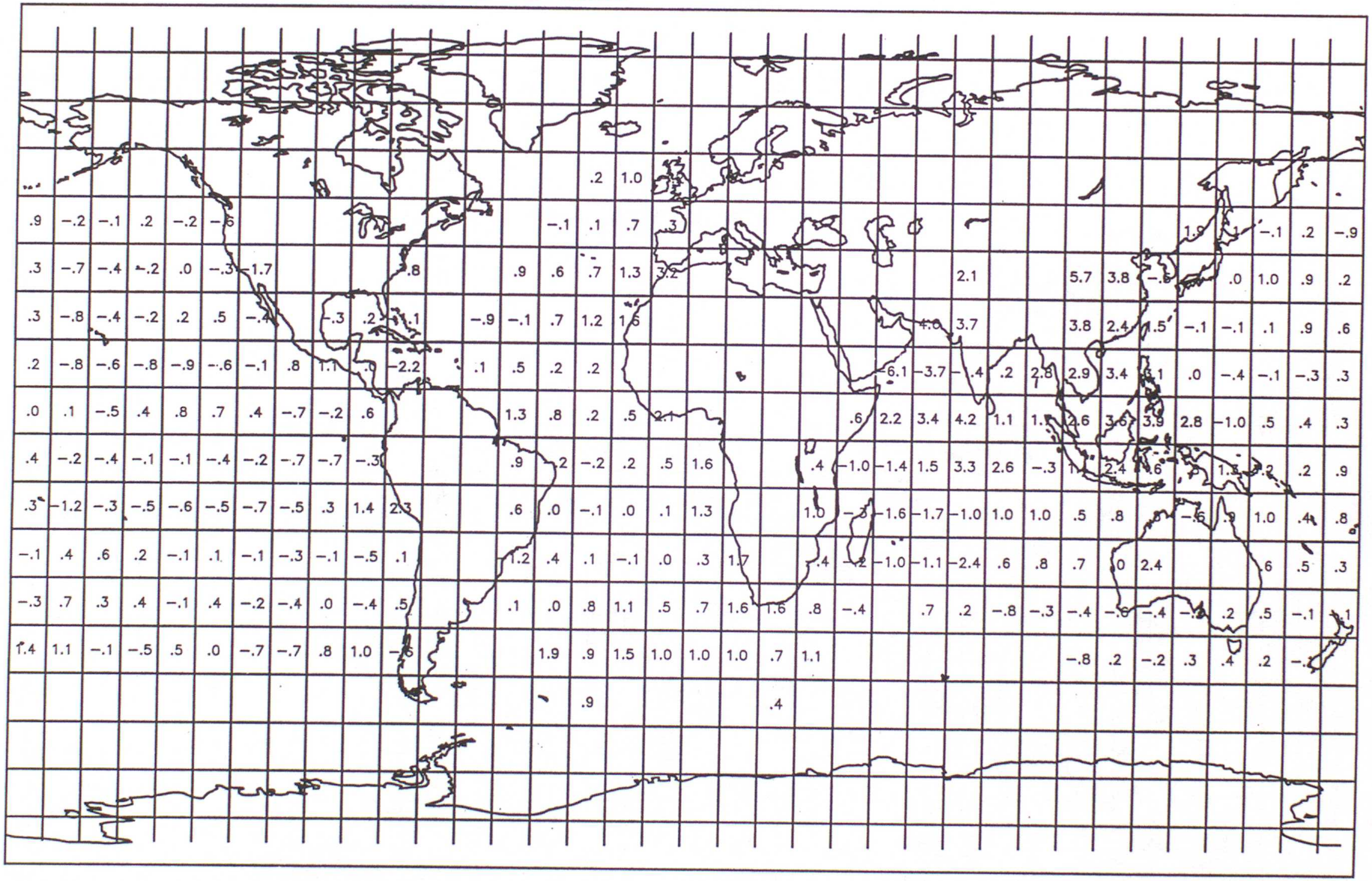
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

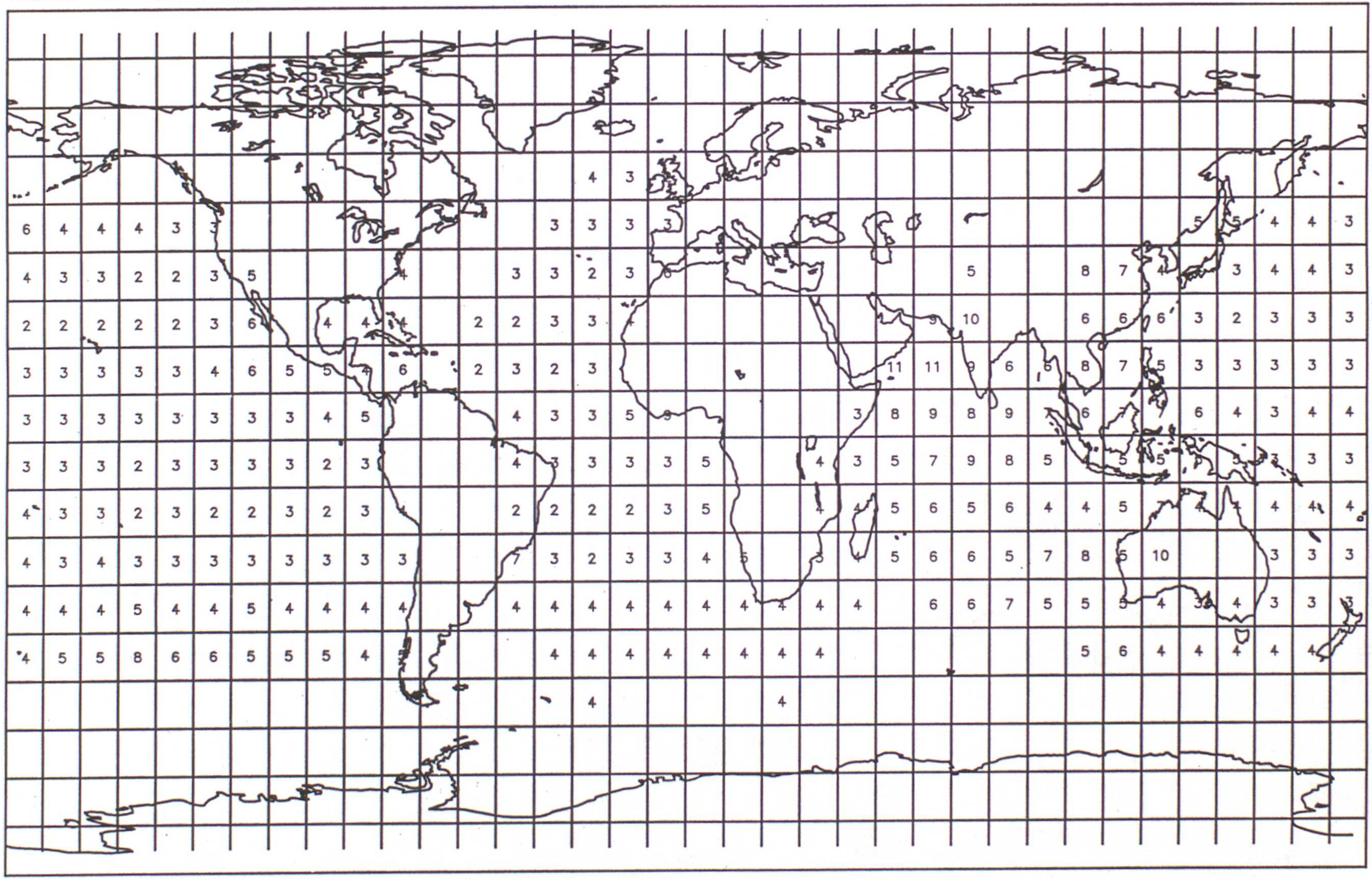
FIGURE 12


REPRESENTS 5 M/S

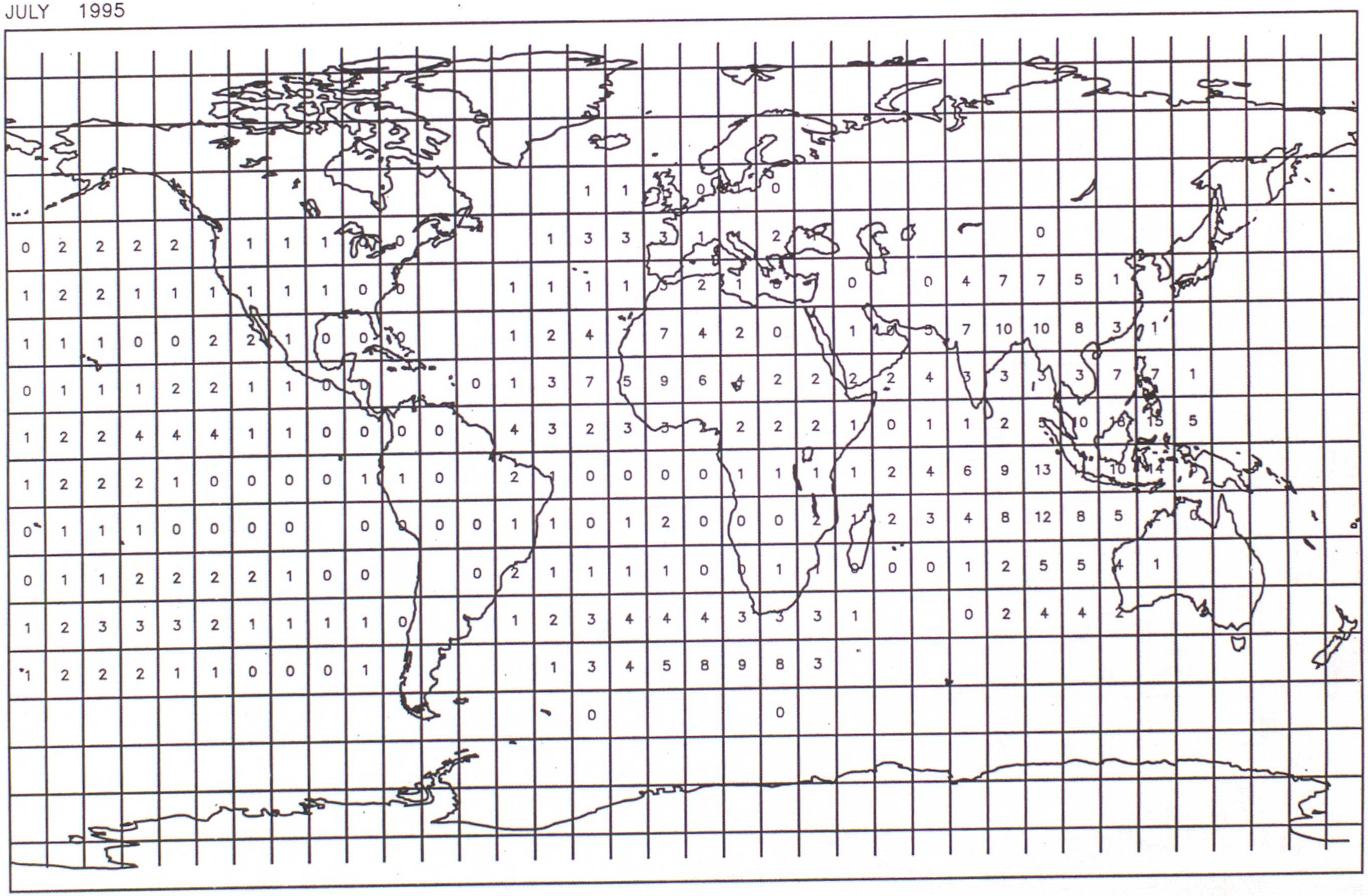
SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
JULY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


.2 1.0
.9 −.2 −.1 .2 −.2 −.6 −.1 .1 .7 .3 1.9 .1 −.1 .2 −.9
.3 −.7 −.4 −.2 .0 −.3 −1.7 .8 .9 .6 .7 1.3 3.2 2.1 5.7 3.8 −.6 .0 1.0 .9 .2
.3 −.8 −.4 −.2 .2 .5 −.4 −.3 .2 −.1 −.9 −.1 .7 1.2 1.6 4.0 3.7 3.8 2.4 1.5 −.1 −.1 .1 .9 .6
.2 −.8 −.6 −.8 −.9 −.6 −.1 .8 1.1 .9 −2.2 .1 .5 .2 .2 −6.1 −3.7 −.4 .2 2.8 2.9 3.4 3.1 .0 −.4 −.1 −.3 .3
.0 .1 −.5 .4 .8 .7 .4 −.7 −.2 .6 1.3 .8 .2 .5 2.1 .6 2.2 3.4 4.2 1.1 1.1 2.6 3.6 3.9 2.8 −1.0 .5 .4 .3
.4 −.2 −.4 −.1 −.1 −.4 −.2 −.7 −.7 −.3 .9 .2 −.2 .2 .5 1.6 .4 −1.0 −1.4 1.5 3.3 2.6 −.3 1.4 2.4 1.6 1.3 .2 .2 .9
.3 −1.2 −.3 −.5 −.6 −.5 −.7 −.5 .3 1.4 2.3 .6 .0 −.1 .0 .1 1.3 1.0 −.3 −1.6 −1.7 −1.0 1.0 1.0 .5 .8 .3 −.6 .9 1.0 .4 .8
−.1 .4 .6 .2 −.1 .1 −.1 −.3 −.1 −.5 .1 1.2 .4 .1 −.1 .0 .3 1.7 .4 −.2 −1.0 −1.1 −2.4 .6 .8 .7 .0 2.4 .6 .5 .3
−.3 .7 .3 .4 −.1 .4 −.2 −.4 .0 −.4 .5 .1 .0 .8 1.1 .5 .7 1.6 1.6 .8 −.4 .7 .2 −.8 −.3 −.4 −.6 −.4 −.3 .2 .5 −.1 −.1
1.4 1.1 −.1 −.5 .5 .0 −.7 −.7 .8 1.0 −.6 1.9 .9 1.5 1.0 1.0 1.0 .7 1.1 −.8 .2 −.2 .3 .4 .2 −.2
.9 .4

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
JULY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


4 3
6 4 4 4 3 3 3 3 3 3 5 5 4 4 3
4 3 3 2 2 3 5 4 3 3 2 3 3 5 8 7 4 3 4 4 3
2 2 2 2 2 3 6 4 4 4 2 2 3 3 4 9 10 6 6 6 3 2 3 3 3
3 3 3 3 3 4 6 5 5 4 6 2 3 2 3 11 11 9 6 6 8 7 5 3 3 3 3 3
3 3 3 3 3 3 3 3 4 5 4 3 3 5 9 3 8 9 8 9 7 6 7 6 4 3 4 4
3 3 3 2 3 3 3 3 2 3 4 3 3 3 3 5 4 3 5 7 9 8 5 5 5 3 3 3 3
4 3 3 2 3 2 2 3 2 3 4 2 2 2 2 3 5 4 4 5 6 5 6 4 4 5 4 4 4 4 4 4
4 3 4 3 3 3 3 3 3 3 3 7 3 2 3 3 4 5 3 4 5 6 6 5 7 8 5 10 3 3 3
4 4 4 5 4 4 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6 6 7 5 5 5 4 3 4 3 3 3
4 5 5 8 6 6 5 5 5 4 4 4 4 4 4 4 4 4 5 6 4 4 4 4 4
4 4

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
JULY 1995


1 1 0 0
0 2 2 2 2 1 1 1 1 0 0 1 3 3 3 1 2 0
1 2 2 1 1 1 1 1 1 0 0 1 1 1 1 3 2 1 0 0 0 4 7 7 5 1
1 1 1 0 0 2 2 1 0 0 0 1 2 4 7 7 4 2 0 1 0 5 7 10 10 8 3 1
0 1 1 1 2 2 1 1 0 0 0 1 3 7 5 9 6 4 2 2 2 2 4 3 3 3 3 7 7 1
1 2 2 4 4 4 1 1 0 0 0 0 4 3 2 3 3 2 2 2 2 1 0 1 1 2 5 10 18 15 5
1 2 2 2 1 0 0 0 0 1 1 0 2 1 0 0 0 0 1 1 1 1 2 4 6 9 13 10 14
0 1 1 1 0 0 0 0 0 0 0 0 1 1 0 1 2 0 0 0 2 1 2 3 4 8 12 8 5 2 0
0 1 1 2 2 2 2 1 0 0 0 2 1 1 1 1 0 0 1 1 0 0 0 1 2 5 5 4 1
1 2 3 3 3 2 1 1 1 1 0 1 2 3 4 4 4 3 3 3 1 0 2 4 4 2
1 2 2 2 1 1 0 0 0 1 1 3 4 5 8 9 8 3
0 0

SATOB VECTOR MEAN WINDS BETWEEN 401–700 HPA
JULY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16

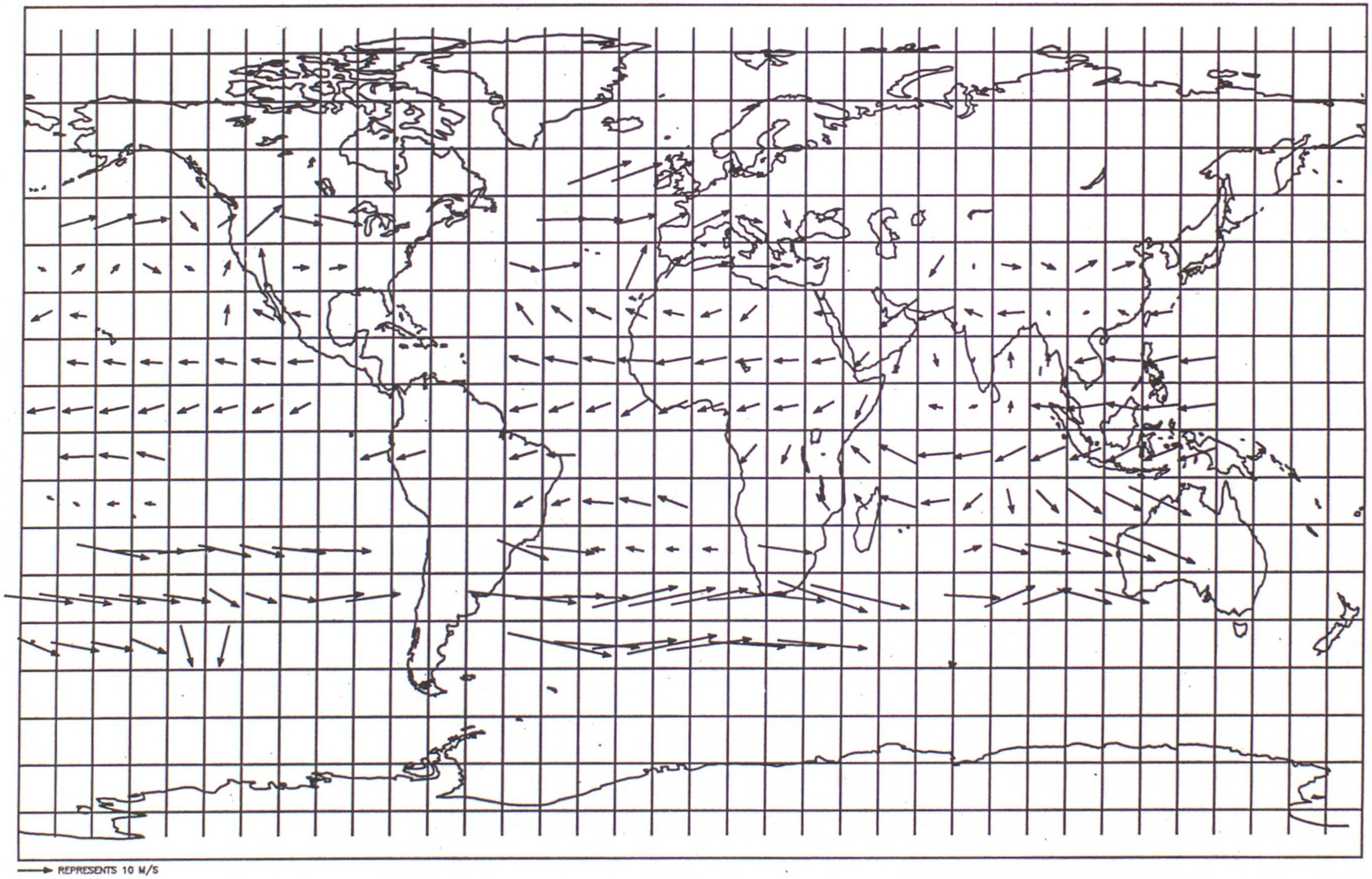
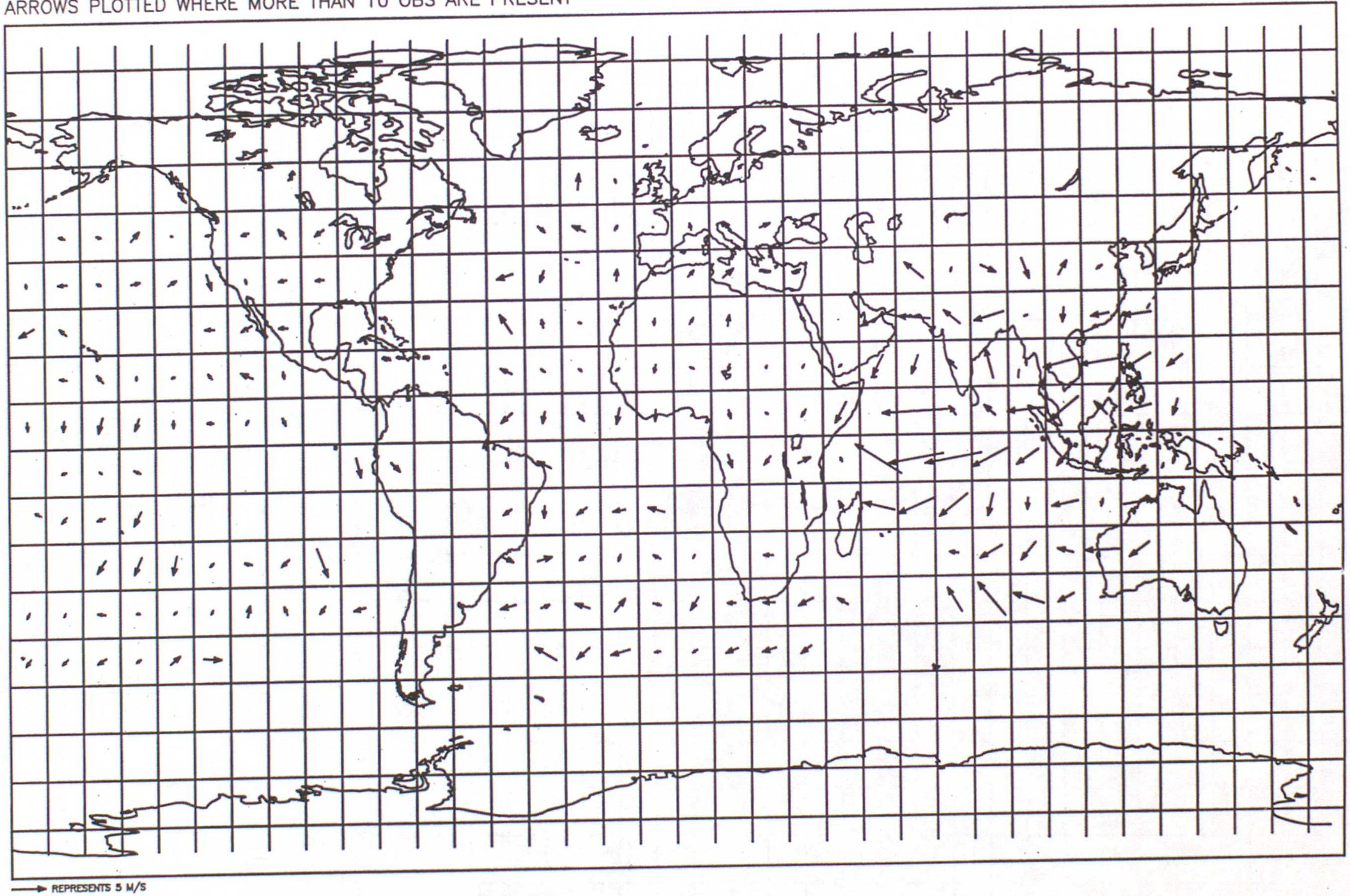
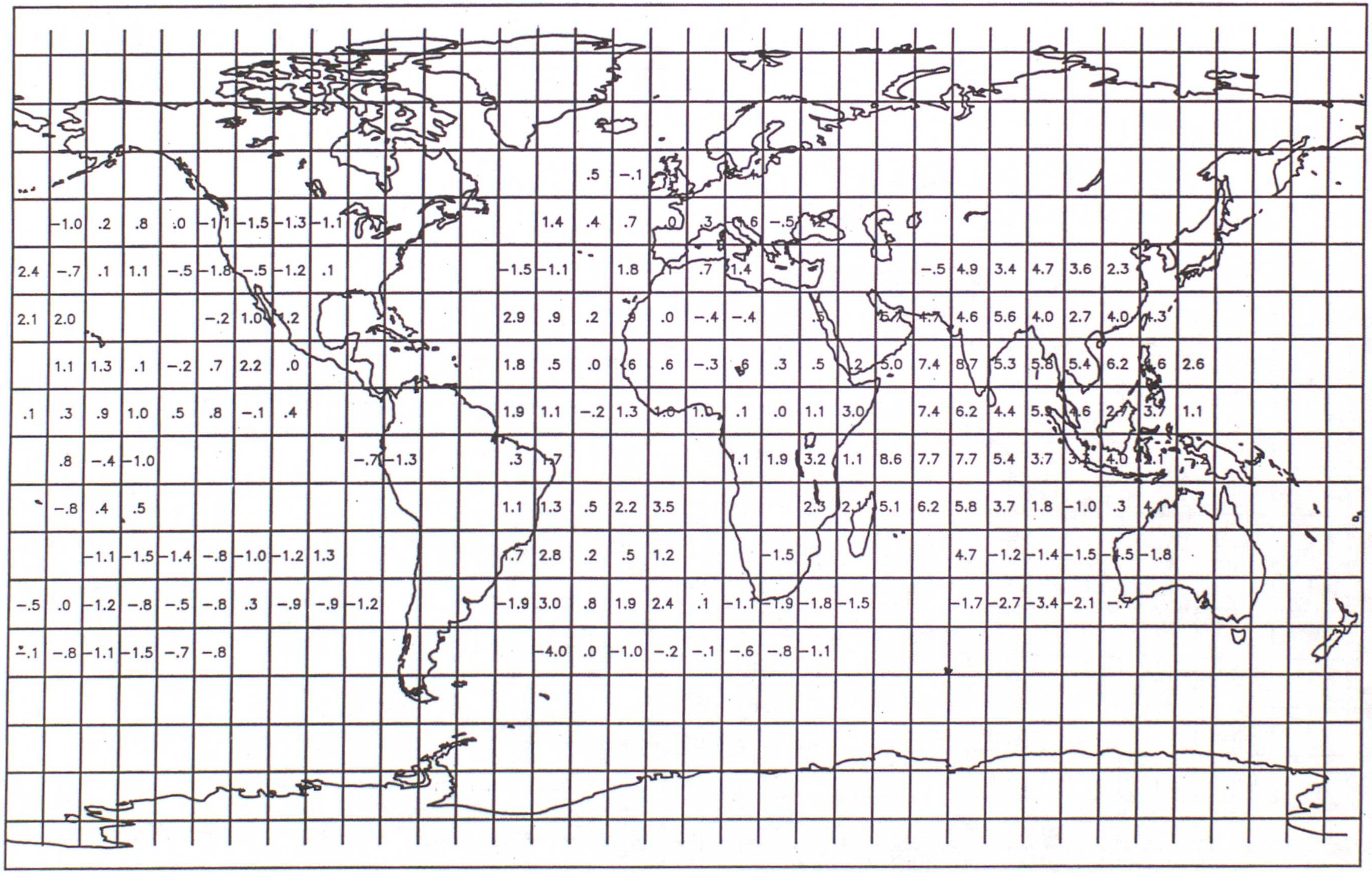

REPRESENTS 10 M/S

FIGURE 17

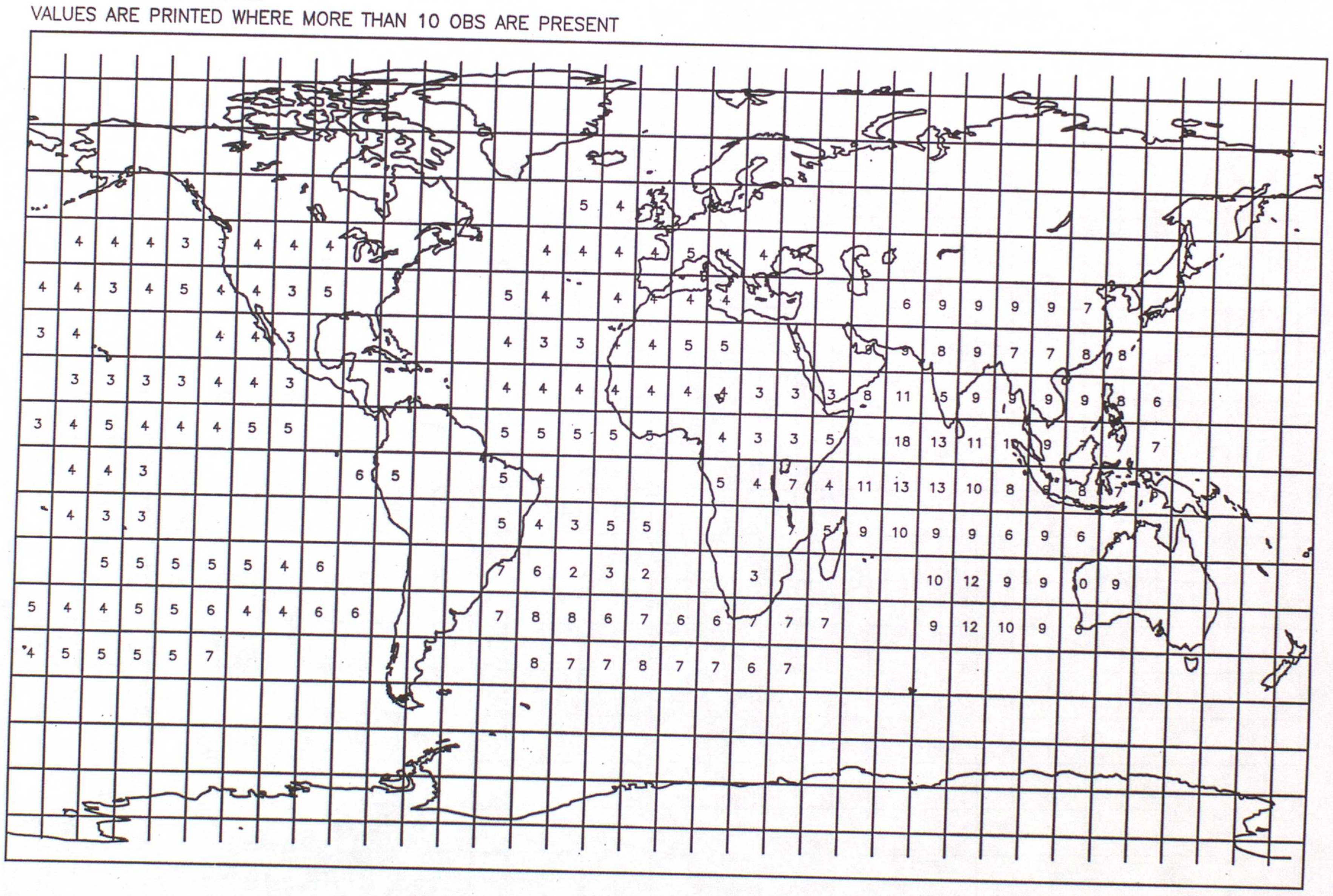
SATOB O−B VECTOR WIND DIFFERENCES BETWEEN 401−700 HPA
JULY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPRESENTS 5 M/S

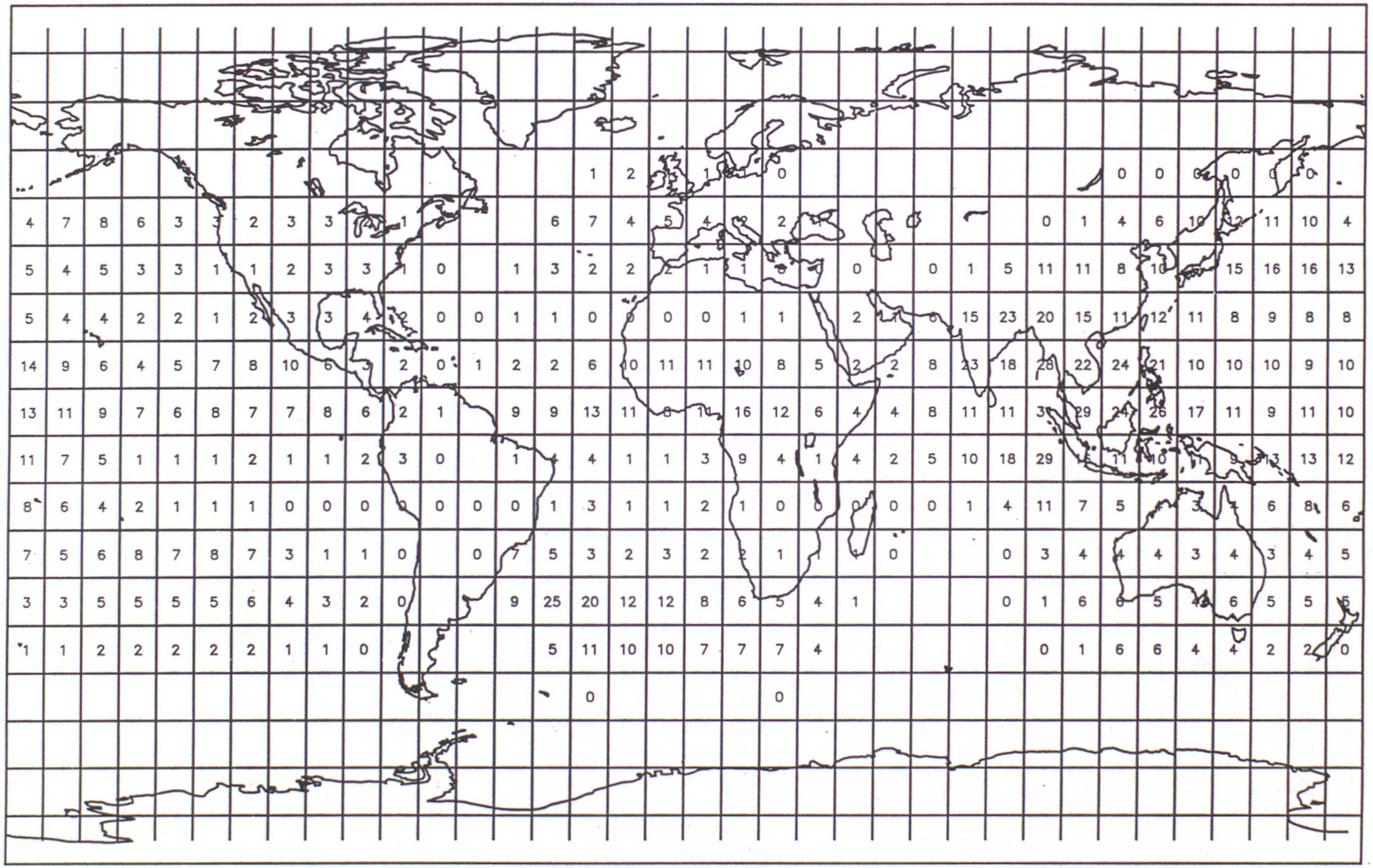
SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
JULY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


.5 −.1
−1.0 .2 .8 .0 −1.1 −1.5 −1.3 −1.1 1.4 .4 .7 .0 .3 .6 −.5 .2
2.4 −.7 .1 1.1 −.5 −1.8 −.5 −1.2 .1 −1.5 −1.1 1.8 .1 .7 1.4 −.5 4.9 3.4 4.7 3.6 2.3
2.1 2.0 −.2 1.0 .2 2.9 .9 .2 .9 .0 −.4 −.4 .5 5.7 4.7 4.6 5.6 4.0 2.7 4.0 4.3
1.1 1.3 .1 −.2 .7 2.2 .0 1.8 .5 .0 .6 .6 −.3 .6 .3 .5 .2 5.0 7.4 8.7 5.3 5.8 5.4 6.2 4.6 2.6
.1 .3 .9 1.0 .5 .8 −.1 .4 1.9 1.1 −.2 1.3 1.0 1.0 .1 .0 1.1 3.0 7.4 6.2 4.4 5.9 4.6 2.7 3.7 1.1
.8 −.4 −1.0 −.7 −1.3 .3 1.7 1.1 1.9 3.2 1.1 8.6 7.7 7.7 5.4 3.7 3.3 4.0 2.1 7.2
−.8 .4 .5 1.1 1.3 .5 2.2 3.5 2.3 2.1 5.1 6.2 5.8 3.7 1.8 −1.0 .3 4.1
−1.1 −1.5 −1.4 −.8 −1.0 −1.2 1.3 .7 2.8 .2 .5 1.2 −1.5 4.7 −1.2 −1.4 −1.5 −1.5 −1.8
−.5 .0 −1.2 −.8 −.5 −.8 .3 −.9 −.9 −1.2 −1.9 3.0 .8 1.9 2.4 .1 −1.1 −1.9 −1.8 −1.5 −1.7 −2.7 −3.4 −2.1 −.7
−.1 −.8 −1.1 −1.5 −.7 −.8 −4.0 .0 −1.0 −.2 −.1 −.6 −.8 −1.1

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
JULY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

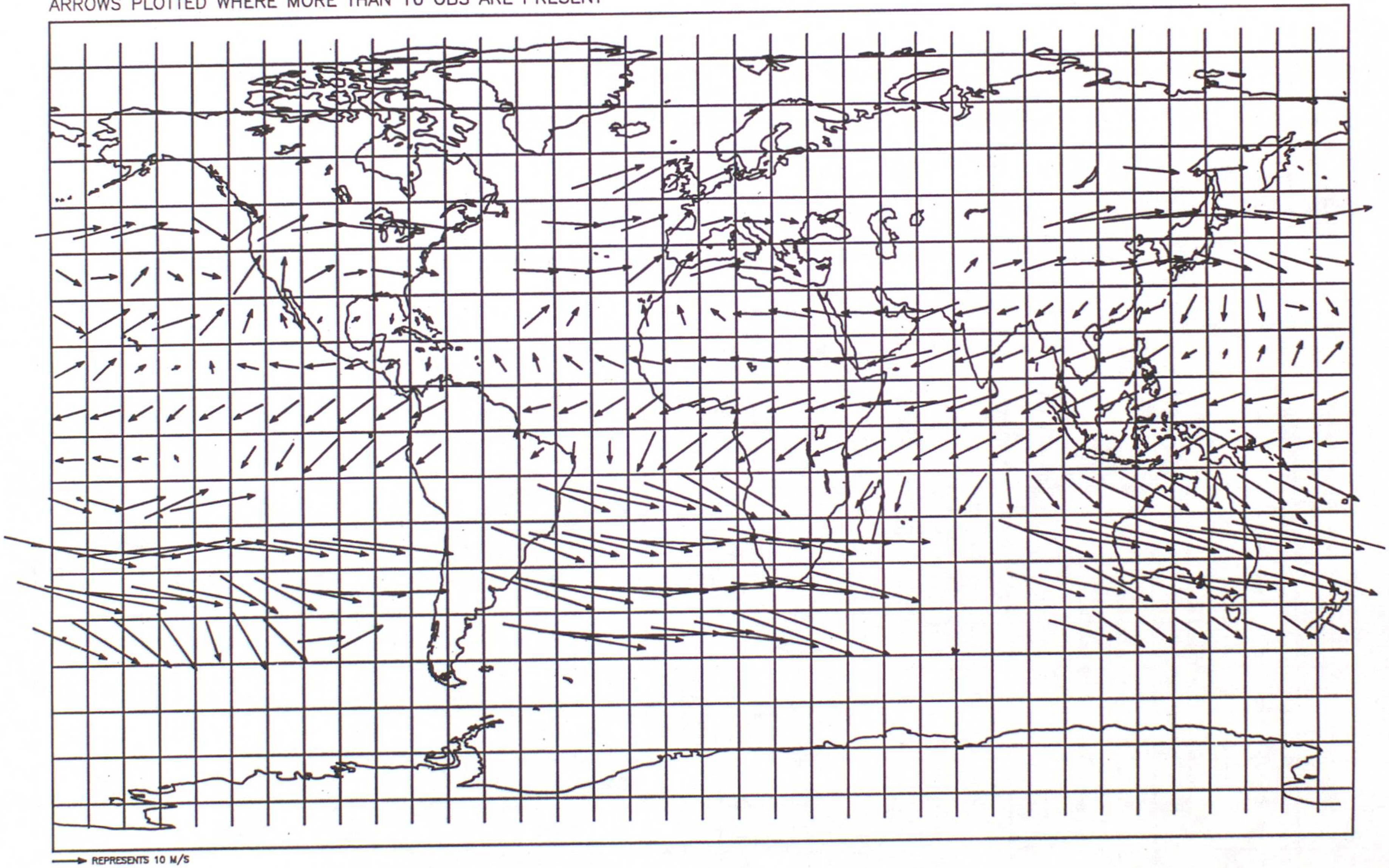

5 4
4 4 4 3 3 4 4 4 4 4 4 4 5 4 4
4 4 3 4 5 4 4 3 5 5 4 4 4 4 4 6 9 9 9 9 7
3 4 4 4 3 4 3 3 4 4 5 5 3 8 9 8 9 7 7 8 8
3 3 3 3 4 4 3 4 4 4 4 4 4 4 3 3 3 8 11 15 9 9 9 9 8 6
3 4 5 4 4 4 5 5 5 5 5 5 5 4 3 3 5 18 13 11 11 9 7 7 7
4 4 3 6 5 5 4 5 4 7 4 11 13 13 10 8 8 8 7
4 3 3 5 4 3 5 5 7 5 9 10 9 9 6 9 6 8
5 5 5 5 5 4 6 7 6 2 3 2 3 10 12 9 9 0 9
5 4 4 5 5 6 4 4 6 6 7 8 8 6 7 6 6 7 7 7 9 12 10 9 6
4 5 5 5 5 7 8 7 7 8 7 7 6 7

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
JULY 1995


1 2 1 1 0 0 0 0 0 0 0
4 7 8 6 3 3 2 3 3 1 6 7 4 5 4 2 2 0 1 4 6 10 12 11 10 4
5 4 5 3 3 1 1 2 3 3 1 0 1 3 2 2 2 1 1 0 0 0 0 1 5 11 11 8 10 15 16 16 13
5 4 4 2 2 1 2 3 3 4 2 0 0 1 1 0 0 0 0 1 1 2 1 0 15 23 20 15 11 12 11 8 9 8 8
14 9 6 4 5 7 8 10 6 3 2 0 1 2 2 6 10 11 11 10 8 5 2 2 8 23 18 28 22 24 21 10 10 10 9 10
13 11 9 7 6 8 7 7 8 6 2 1 9 9 13 11 8 11 16 12 6 4 4 8 11 11 31 29 24 26 17 11 9 11 10
11 7 5 1 1 1 2 1 1 2 3 0 1 4 4 1 1 3 9 4 1 4 2 5 10 18 29 15 11 10 11 9 13 13 12
8 6 4 2 1 1 1 0 0 0 0 0 0 0 1 3 1 1 2 1 0 0 0 0 0 1 4 11 7 5 4 3 4 6 8 6
7 5 6 8 7 8 7 3 1 1 0 0 7 5 3 2 3 2 2 1 1 1 0 0 3 4 4 4 3 4 3 4 5
3 3 5 5 5 5 6 4 3 2 0 9 25 20 12 12 8 6 5 4 1 0 1 6 6 5 4 6 5 5 5
1 1 2 2 2 2 2 1 1 0 5 11 10 10 7 7 7 4 0 1 6 6 4 4 2 2 0
0 0

SATOB VECTOR MEAN WINDS BETWEEN 101–400 HPA
JULY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21


REPRESENTS 10 M/S

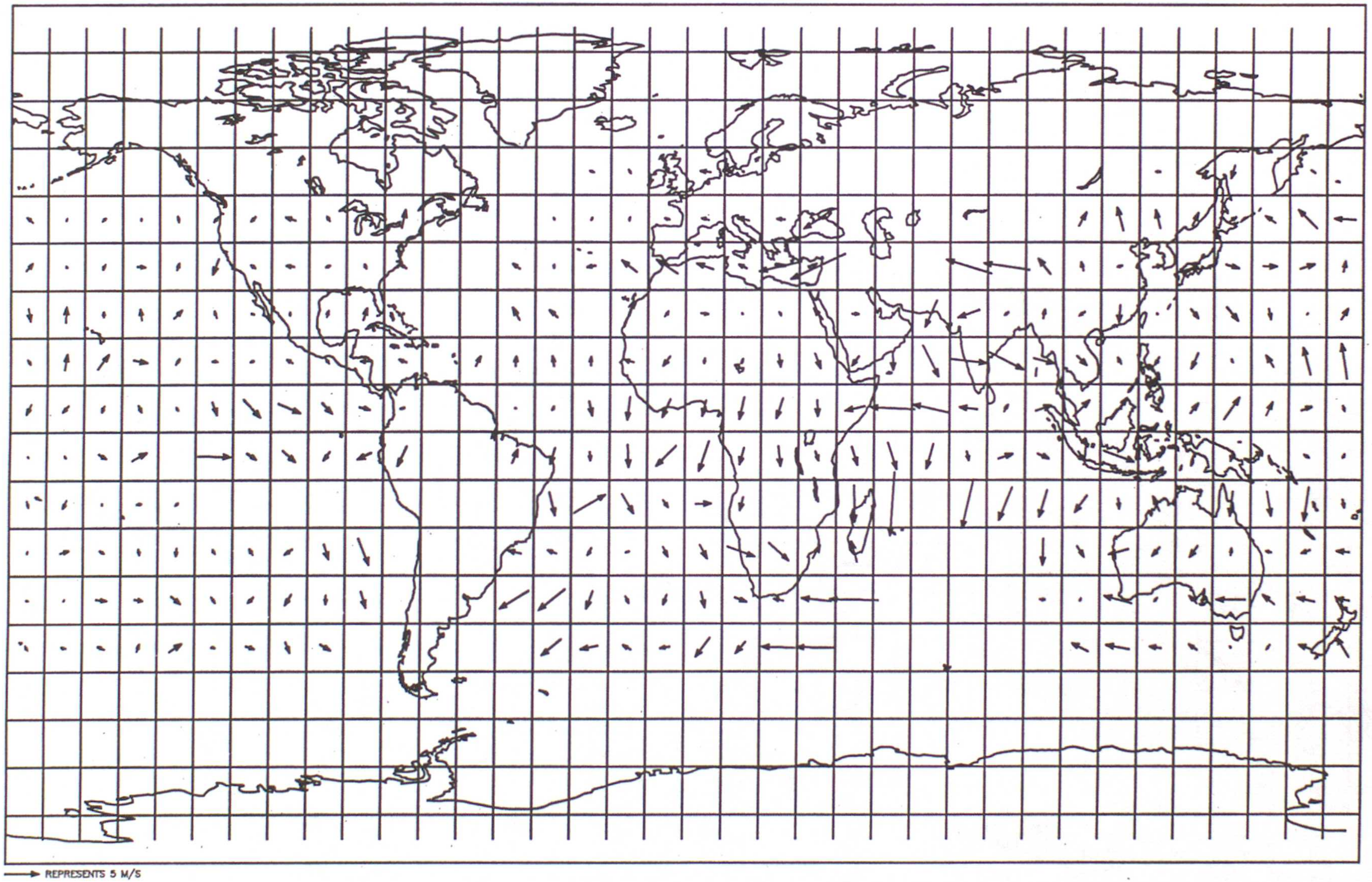
SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 101–400 HPA

JULY 1995

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 22

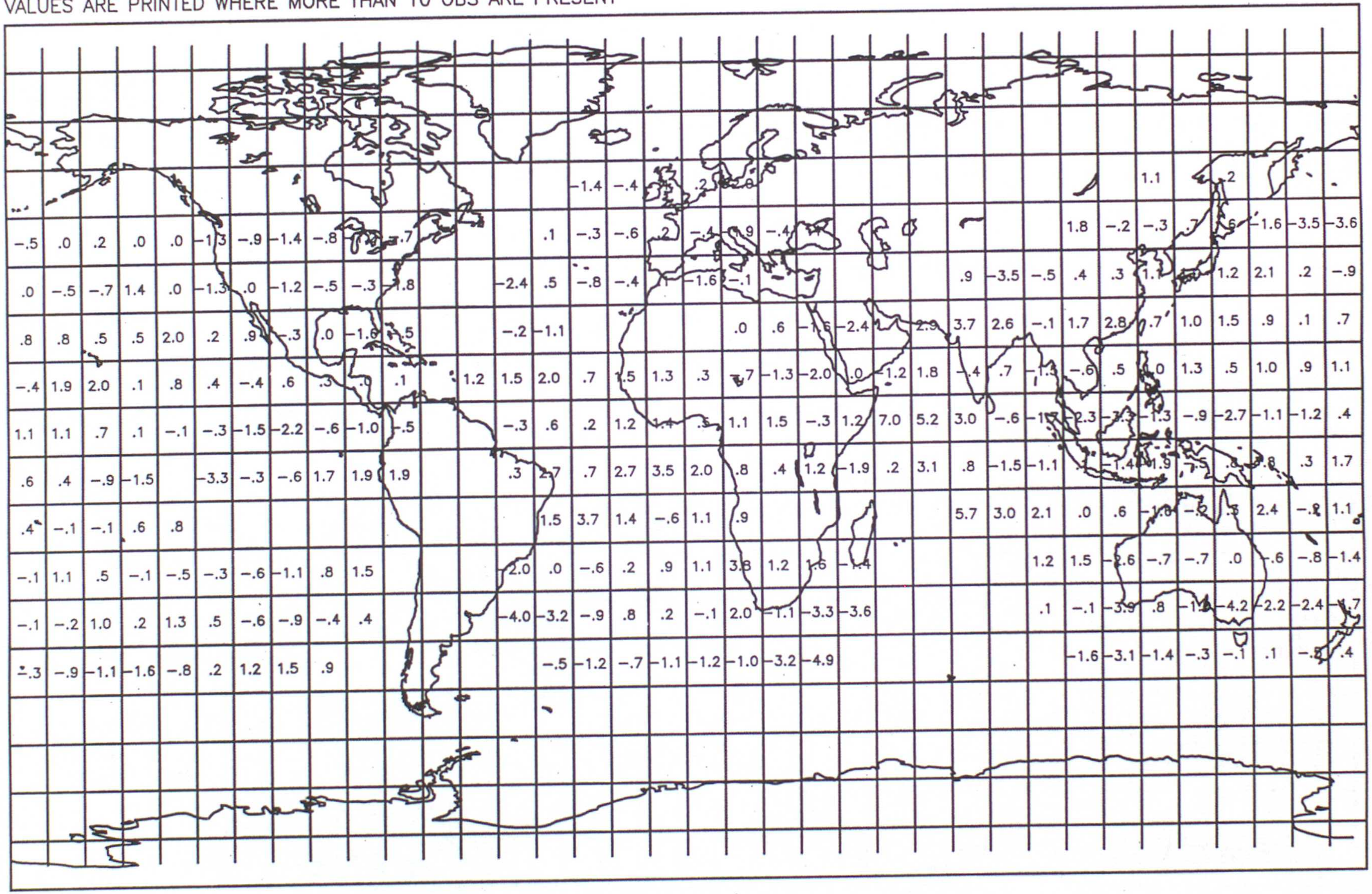

REPRESENTS 5 M/S

SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23

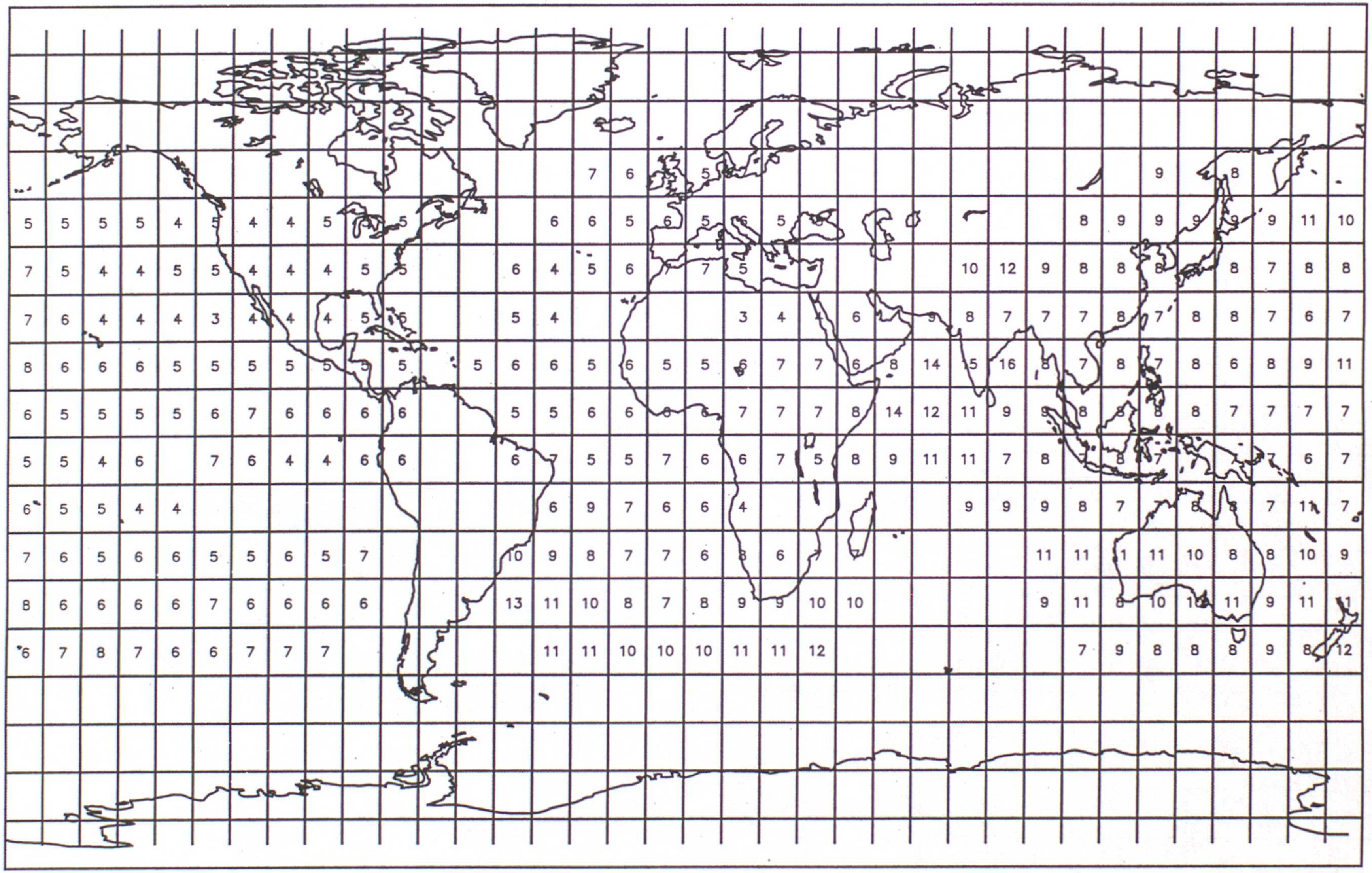
JULY 1995

USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-1.4 -.4 .2 .0 1.1 .2
-.5 .0 .2 .0 .0 -1.3 -.9 -1.4 -.8 .7 .1 -.3 -.6 .2 -.4 .9 -.4 1.8 -.2 -.3 .7 .6 -1.6 -3.5 -3.6
.0 -.5 -.7 1.4 .0 -1.3 .0 -1.2 -.5 -.3 .8 -2.4 .5 -.8 -.4 -1.6 -.1 .9 -3.5 -.5 .4 .3 1.1 1.2 2.1 .2 -.9
.8 .8 .5 .5 2.0 .2 .9 -.3 .0 -1.6 .5 -.2 -1.1 .0 .6 -1.6 -2.4 2.9 3.7 2.6 -.1 1.7 2.8 .7 1.0 1.5 .9 .1 .7
-.4 1.9 2.0 .1 .8 .4 -.4 .6 .3 .0 .1 1.2 1.5 2.0 .7 1.5 1.3 .3 .7 -1.3 -2.0 .0 -1.2 1.8 -.4 .7 -1.3 -.6 .5 .0 1.3 .5 1.0 .9 1.1
1.1 1.1 .7 .1 -.1 -.3 -1.5 -2.2 -.6 -1.0 -.5 -.3 .6 .2 1.2 1.4 .5 1.1 1.5 -.3 1.2 7.0 5.2 3.0 -.6 -1.7 -2.3 -3.3 -1.3 -.9 -2.7 -1.1 -1.2 .4
.6 .4 -.9 -1.5 -3.3 -.3 -.6 1.7 1.9 1.9 .3 2.7 .7 2.7 3.5 2.0 .8 .4 1.2 -1.9 .2 3.1 .8 -1.5 -1.1 .1 -1.4 1.9 .5 .8 .8 .3 1.7
.4 -.1 -.1 .6 .8 1.5 3.7 1.4 -.6 1.1 .9 5.7 3.0 2.1 .0 .6 -1.0 -.2 .3 2.4 -.2 1.1
-.1 1.1 .5 -.1 -.5 -.3 -.6 -1.1 .8 1.5 2.0 .0 -.6 .2 .9 1.1 3.8 1.2 1.6 -1.4 1.2 1.5 -2.6 -.7 -.7 .0 .6 -.8 -1.4
-.1 -.2 1.0 .2 1.3 .5 -.6 -.9 -.4 .4 -4.0 -3.2 -.9 .8 .2 -.1 2.0 -1.1 -3.3 -3.6 .1 -.1 -3.9 .8 -1.8 -4.2 -2.2 -2.4 -1.7
-.3 -.9 -1.1 -1.6 -.8 .2 1.2 1.5 .9 -.5 -1.2 -.7 -1.1 -1.2 -1.0 -3.2 -4.9 -1.6 -3.1 -1.4 -.3 -.1 .1 -.5 .4

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
JULY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



MONITORING OF SATELLITE TEMPERATURES

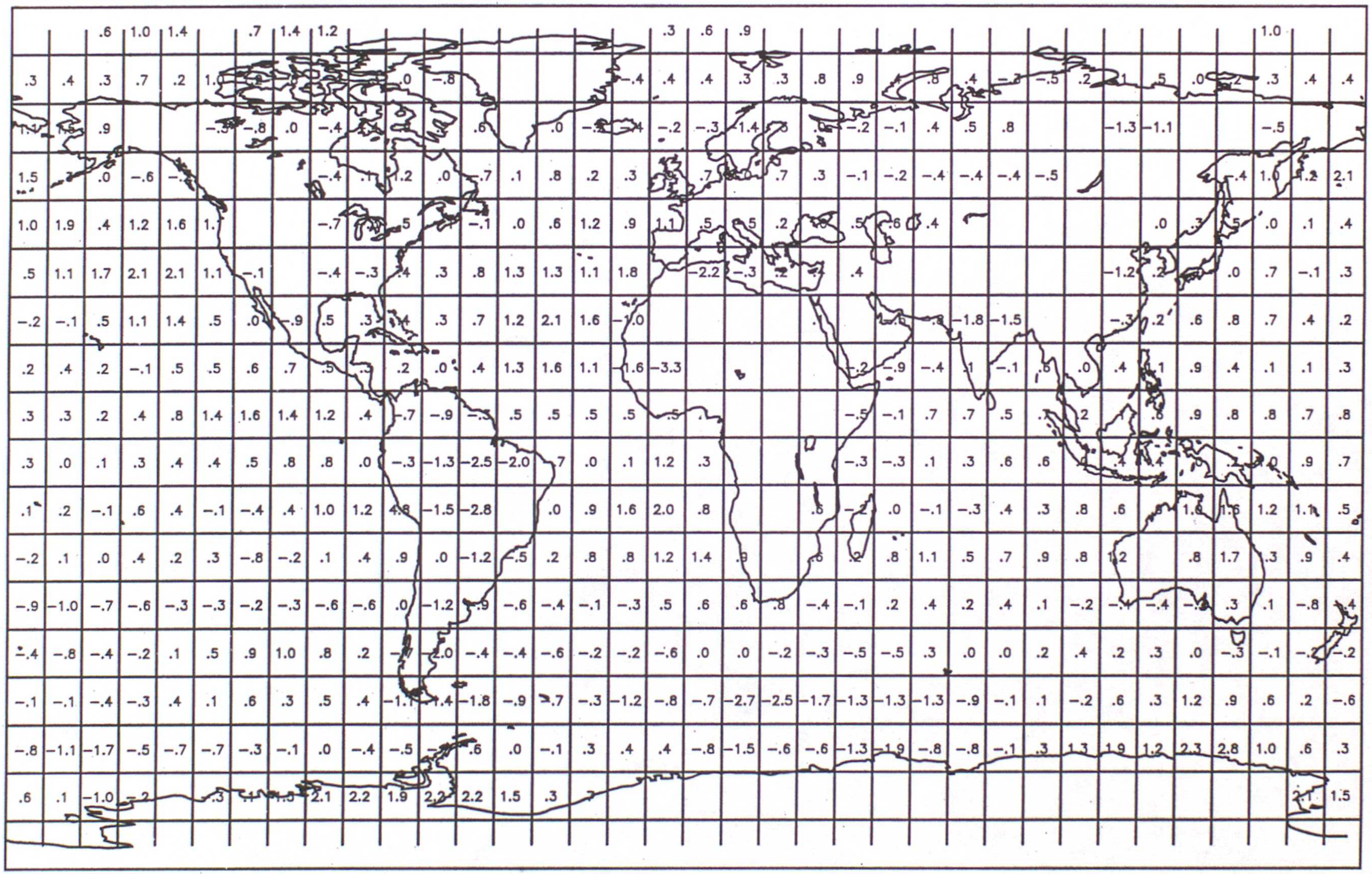
MONITORING CENTRE: BRACKNELL

MONTH:July, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from NOAA-12 500 km.
Standard of comparison	:Background field from Bracknell global model.
Selection Criteria	:All SATEM soundings where number of observations > 30.
Data Extracted	:Layer:850 - 1000 hPa 100 - 300 hPa 30 - 50 hPa :Mean observation minus background temperature differences

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
JULY 1995
FIGURE 25
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


.6 1.0 1.4 .7 1.4 1.2 .3 .6 .9 1.0
.3 .4 .3 .7 .2 1.0 .0 –.8 –.4 .4 .4 .3 .3 .8 .9 .8 .4 –.5 .2 .5 .0 .3 .4 .4
.9 –.3 –.8 .0 –.4 .6 .0 –.2 –.3 –1.4 –.2 –.1 .4 .5 .8 –1.3 –1.1 –.5
1.5 .0 –.6 –.4 .2 .0 .7 .1 .8 .2 .3 .7 .7 .3 –.1 –.2 –.4 –.4 –.4 –.5 –.4 1.0 .2 2.1
1.0 1.9 .4 1.2 1.6 –.7 .5 –.1 .0 .6 1.2 .9 1.1 .5 .5 .2 .5 .6 .4 .0 .0 .1 .4
.5 1.1 1.7 2.1 2.1 1.1 –.1 –.4 –.3 .4 .3 .8 1.3 1.3 1.1 1.8 –2.2 –.3 .2 .4 –1.2 .2 .0 .7 –.1 .3
–.2 –.1 .5 1.1 1.4 .5 .0 –.9 .5 .3 .4 .3 .7 1.2 2.1 1.6 –1.0 –1.8 –1.5 –.3 .2 .6 .8 .7 .4 .2
.2 .4 .2 –.1 .5 .5 .6 .7 .5 .2 .0 .4 1.3 1.6 1.1 –1.6 –3.3 –.2 –.9 –.4 .1 –.1 .0 .4 .1 .9 .4 .1 .1 .3
.3 .3 .2 .4 .8 1.4 1.6 1.4 1.2 .4 –.7 –.9 .5 .5 .5 .5 –.5 –.1 .7 .7 .5 .2 .9 .8 .8 .7 .8
.3 .0 .1 .3 .4 .4 .5 .8 .8 .0 –.3 –1.3 –2.5 –2.0 .7 .0 .1 1.2 .3 –.3 –.3 .1 .3 .6 .6 .4 .4 .0 .9 .7
.1 .2 –.1 .6 .4 –.1 –.4 .4 1.0 1.2 4.8 –1.5 –2.8 .0 .9 1.6 2.0 .8 .5 –.2 .0 –.1 –.3 .4 .3 .8 .6 1.6 1.6 1.2 1.1 .5
–.2 .1 .0 .4 .2 .3 –.8 –.2 .1 .4 .9 .0 –1.2 .5 .2 .8 .8 1.2 1.4 .9 .6 .2 .8 1.1 .5 .7 .9 .8 1.2 .8 1.7 .3 .9 .4
–.9 –1.0 –.7 –.6 –.3 –.3 –.2 –.3 –.6 –.6 .0 –1.2 –.9 –.6 –.4 –.1 –.3 .5 .6 .6 .8 –.4 –.1 .2 .4 .2 .4 .1 –.2 –.1 –.4 –.3 .3 .1 –.8 .4
–.4 –.8 –.4 –.2 .1 .5 .9 1.0 .8 .2 –.7 –2.0 –.4 –.4 –.6 –.2 –.2 –.6 .0 .0 –.2 –.3 –.5 –.5 .3 .0 .0 .2 .4 .2 .3 .0 –.3 –.1 –.2 –.2
–.1 –.1 –.4 –.3 .4 .1 .6 .3 .5 .4 –1.1 –1.4 –1.8 –.9 –.7 –.3 –1.2 –.8 –.7 –2.7 –2.5 –1.7 –1.3 –1.3 –1.3 –.9 –.1 .1 –.2 .6 .3 1.2 .9 .6 .2 –.6
–.8 –1.1 –1.7 –.5 –.7 –.7 –.3 –.1 .0 –.4 –.5 –.6 .6 .0 –.1 .3 .4 .4 –.8 –1.5 –.6 –.6 –1.3 –1.9 –.8 –.8 –.1 .3 1.3 1.9 1.2 2.3 2.8 1.0 .6 .3
.6 .1 –1.0 –.2 .3 1.1 1.3 2.1 2.2 1.9 2.2 2.2 1.5 .3 .7 2.1 1.5

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
JULY 1995
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

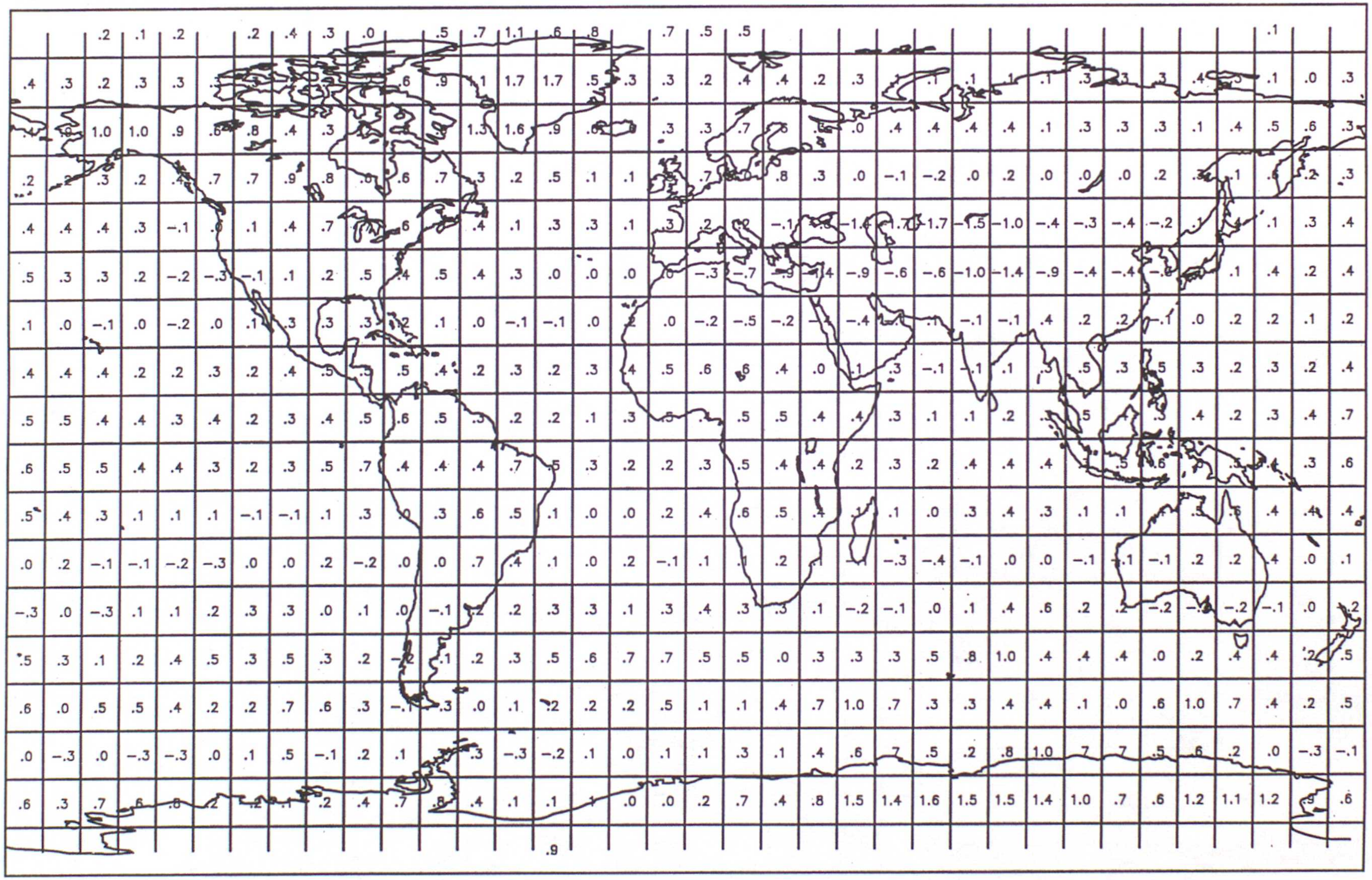


FIGURE 26

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
JULY 1995
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 27

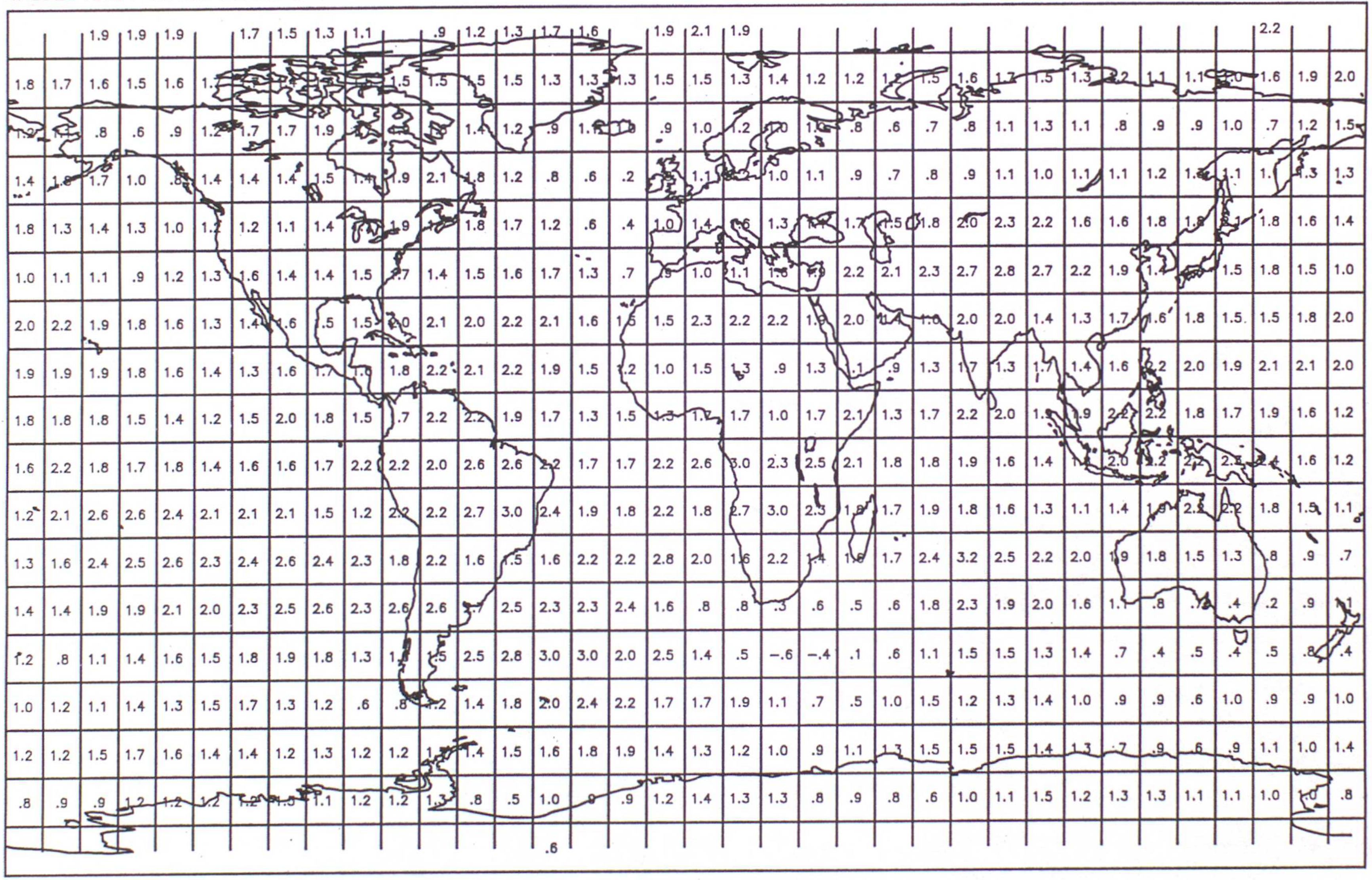


TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoy.

Area monitored :10°N - 80°N, 85°W - 0°W

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :All hours combined.

Elements monitored
:Mean sea-level pressure (hPa)
:Wind speed (m s^{-1})
:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. A positive bias indicates the observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS
:15 hPa (pressure)
:25 m s^{-1} (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
25552	72.7	-18.7	ALL	MSLP	SUR	244	0	0	1.0	-0.4	1.1
25565	58.6	-52.5	ALL	MSLP	SUR	676	0	0	1.2	-0.5	1.3
40604	39.1	-48.1	ALL	MSLP	SUR	1	0	0	0.0	0.1	0.1
40702	29.1	-72.4	ALL	MSLP	SUR	1	0	0	0.0	2.2	2.2
44613	50.2	-42.5	ALL	MSLP	SUR	711	0	0	1.9	-0.6	2.0
44616	55.7	-42.9	ALL	MSLP	SUR	1569	1	0	1.0	0.6	1.2
44624	45.9	-15.3	ALL	MSLP	SUR	1136	3	0	1.0	-0.1	1.0
44726	53.8	-12.8	ALL	MSLP	SUR	1465	5	0	0.9	0.4	1.0
44728	56.4	-42.3	ALL	MSLP	SUR	1458	4	0	0.9	-0.1	0.9
44742	58.8	-39.9	ALL	MSLP	SUR	1878	3	0	0.9	-0.1	0.9
44760	33.0	-35.8	ALL	MSLP	SUR	255	0	0	1.4	-0.2	1.4
44762	52.3	-10.2	ALL	MSLP	SUR	3	0	0	5.8	1.9	6.1
44764	58.9	-10.1	ALL	MSLP	SUR	1788	2	0	0.9	0.0	0.9
44769	51.8	-40.8	ALL	MSLP	SUR	280	0	0	1.3	-0.3	1.3
44770	34.5	-42.1	ALL	MSLP	SUR	406	3	1	1.1	-0.1	1.1
44777	37.7	-56.5	ALL	MSLP	SUR	506	0	0	2.2	0.4	2.2
44779	34.3	-40.3	ALL	MSLP	SUR	525	0	0	1.4	0.1	1.4
44780	53.9	-13.3	ALL	MSLP	SUR	1548	1	0	1.0	-0.1	1.0
62511	48.0	-13.1	ALL	MSLP	SUR	657	3	0	1.4	0.6	1.5
62516	48.4	-4.6	ALL	MSLP	SUR	7	0	0	1.2	-6.7	6.8
62517	46.1	-21.8	ALL	MSLP	SUR	697	0	0	1.0	0.2	1.0
62518	45.5	-15.2	ALL	MSLP	SUR	681	0	0	0.9	0.0	0.9
62519	48.8	-18.8	ALL	MSLP	SUR	571	0	0	1.2	-0.5	1.3
62524	26.9	-45.7	ALL	MSLP	SUR	716	0	0	1.1	0.3	1.1
62673	56.5	-29.7	ALL	MSLP	SUR	857	0	0	1.6	0.2	1.6
62675	56.4	-25.1	ALL	MSLP	SUR	183	0	0	1.1	0.2	1.1
64529	59.8	-25.8	ALL	MSLP	SUR	1	0	0	0.0	-3.4	3.4
64544	57.4	-41.2	ALL	MSLP	SUR	69	0	0	0.9	-0.1	0.9
64575	62.9	-25.5	ALL	MSLP	SUR	916	0	0	1.3	0.0	1.3
64576	59.9	-15.9	ALL	MSLP	SUR	912	0	0	0.9	0.3	1.0
64577	60.6	-12.4	ALL	MSLP	SUR	814	1	0	1.0	-0.2	1.0
65562	60.9	-21.1	ALL	MSLP	SUR	1828	0	0	1.0	-0.2	1.0
65581	58.7	-42.3	ALL	MSLP	SUR	1560	0	0	1.0	-0.3	1.0
65594	59.7	-31.9	ALL	MSLP	SUR	593	0	0	1.4	-0.1	1.4
WIND SPEED											
40604	39.1	-48.1	ALL	SPEED	SUR	1	0	0	0.0	-0.9	0.9
40702	29.1	-72.4	ALL	SPEED	SUR	1	0	0	0.0	-0.4	0.4
44613	50.2	-42.5	ALL	SPEED	SUR	685	0	0	2.3	0.3	2.3
44742	58.8	-39.9	ALL	SPEED	SUR	1737	1	0	3.0	-3.4	4.5
44762	52.3	-10.2	ALL	SPEED	SUR	3	0	0	9.2	11.1	14.4
44764	58.9	-10.1	ALL	SPEED	SUR	1252	1	0	2.5	-3.5	4.3
62518	45.5	-15.2	ALL	SPEED	SUR	660	0	0	1.5	0.2	1.5
WIND DIRECTION											
44613	50.2	-42.5	ALL	DIRN.	SUR	523	0	0	35.6	22.1	41.9
44742	58.8	-39.9	ALL	DIRN.	SUR	1373	1	0	27.2	24.0	36.2
44762	52.3	-10.2	ALL	DIRN.	SUR	3	0	0	29.2	-81.3	86.4
44764	58.9	-10.1	ALL	DIRN.	SUR	939	1	0	22.1	-12.3	25.3
62518	45.5	-15.2	ALL	DIRN.	SUR	436	0	0	17.1	0.8	17.1

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in $m\ s^{-1}$
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS		:10.0 °C ; 60 $m\ s^{-1}$ Vector Wind
SELECTION CRITERIA		:N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	2906	0	1	1.8	0.0	2891	0	2	0	7.8	1.2
AAN	93	1	2	1.2	-0.5	92	0	1	0	8.8	0.4
ACA	1029	0	2	2.1	0.0	1065	0	2	1	6.6	0.7
ACU	28	0	4	1.4	-1.1	29	0	3	0	7.8	0.7
AEA	156	2	100	4.7	2.7	156	0	9	0	10.0	0.7
AEL	295	0	2	1.6	-0.1	303	0	3	0	8.4	1.3
AFL	224	0	100	2.5	0.6	224	0	8	0	9.5	0.6
AFR	949	0	5	1.8	-0.3	967	0	5	0	7.7	0.9
AIC	44	2	14	2.4	1.2	46	0	17	0	11.8	-1.8
AIH	110	0	2	1.5	0.3	112	0	3	0	7.5	0.8
AMT	58	0	5	2.2	0.7	66	0	6	0	8.3	0.4
AMX	111	1	0	1.6	-0.4	111	0	1	0	7.4	1.0
ANZ	191	1	4	2.4	-1.2	188	0	5	3	8.5	1.4
AOM	242	2	1	1.5	0.6	247	0	1	0	7.8	1.4
AUA	35	0	0	2.2	-0.7	36	0	0	0	8.3	1.9
AVA	129	2	2	1.5	-0.1	129	0	4	0	10.5	0.6
AZA	424	2	3	2.0	0.0	426	0	3	0	7.8	1.4
BAL	248	1	15	1.6	-0.3	250	0	15	0	7.6	1.4
BAW	1507	1	3	1.9	0.0	1519	0	3	0	7.9	1.1
BBB	28	0	11	2.0	-0.5	31	0	13	0	7.6	2.1
BWA	96	0	1	2.1	1.0	97	0	2	0	8.3	0.5
CDN	807	0	1	1.9	0.3	806	0	1	0	7.6	1.3
CFG	491	0	2	1.9	-1.0	509	0	3	0	8.5	0.6
CKS	49	2	4	2.0	-0.2	48	0	6	0	9.7	0.3
CKT	50	0	2	1.8	0.0	51	0	2	0	8.3	0.7
CLI	243	0	0	2.1	0.4	248	0	2	0	7.1	0.9
CLX	81	0	2	2.2	-0.8	83	0	2	0	9.8	0.5
CMM	264	0	11	1.9	0.2	271	0	11	0	7.1	1.2
COA	462	1	1	2.0	0.9	465	0	2	0	8.9	1.5
CRL	187	1	6	2.1	0.7	186	0	6	1	8.2	1.4
CSA	41	0	0	2.2	-0.8	41	0	2	0	8.1	1.8
CTM	85	1	19	2.8	-1.3	88	0	20	0	9.2	3.1
CUB	164	1	13	2.6	0.9	163	0	100	0	12.4	2.9
DAF	26	0	4	2.2	0.0	27	0	0	0	6.9	0.3
DAL	2956	0	1	1.9	0.3	2971	0	2	0	8.0	1.0
DHL	426	3	100	3.9	-1.9	428	0	3	0	8.6	1.4
DLH	2327	0	10	2.0	0.3	2344	0	13	3	7.6	0.8
DOA	139	4	26	1.5	0.3	142	0	23	1	7.8	1.6
EIN	37	3	22	2.5	-1.5	37	0	22	0	10.4	1.3
ELY	156	2	4	1.7	-0.2	160	1	7	0	7.9	0.8
EWW	20	5	5	2.2	-0.4	21	0	10	0	11.0	0.5
FDX	431	1	3	1.8	0.6	439	0	4	0	8.5	0.8
FIN	537	0	1	1.8	0.5	538	0	3	1	7.2	1.2
GAF	146	1	3	2.4	0.3	147	0	3	2	7.6	0.8
HLF	95	1	0	1.7	-0.8	95	0	0	0	7.0	0.5
IBE	1235	1	18	1.8	0.2	1238	0	19	0	9.4	0.5
ICE	426	0	0	1.6	-0.2	425	0	3	2	7.4	1.1
KAC	24	0	0	1.5	-0.7	24	0	13	0	8.9	0.4
KLM	2123	0	1	1.9	0.1	2133	0	2	0	7.8	0.8
LDA	65	0	3	1.7	-1.0	67	0	4	0	7.3	0.4
LDI	146	0	4	2.4	-1.4	145	0	3	1	8.6	0.1
LIB	145	0	2	2.0	0.5	149	0	3	1	8.9	1.0
LOT	576	1	2	2.0	-0.5	580	0	2	0	7.4	1.1
LTU	571	1	5	1.7	0.4	564	0	6	0	8.2	1.1
MAH	36	3	3	2.6	-0.8	36	0	6	0	9.6	-0.8
MKD	38	3	0	1.4	-0.1	38	0	0	0	7.9	1.2
MPH	591	1	1	1.9	-0.5	598	0	1	0	7.7	0.7
NWA	2585	0	1	2.1	0.9	2635	0	2	1	7.8	0.8
OAL	32	0	0	1.8	0.3	33	0	0	0	7.8	1.9

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
PIA	25	0	0	2.2	-0.6	25	0	0	0	8.0	0.8
RAF	24	0	0	1.5	0.5	24	0	0	0	6.7	1.0
RIA	51	6	33	3.8	2.4	57	0	32	2	16.9	3.6
RJA	54	0	6	2.7	0.6	58	0	3	0	8.8	0.8
RRR	216	1	22	2.3	-0.4	219	0	24	0	10.4	2.1
SAB	51	0	0	1.4	-0.1	50	0	0	0	9.5	0.5
SAS	1363	0	1	1.8	-0.3	1365	0	2	1	7.1	1.0
SIA	65	0	2	2.0	-0.9	66	0	2	0	9.2	0.6
SPP	76	4	11	1.2	-0.1	75	0	12	0	9.7	1.0
SVA	196	5	11	2.2	0.8	204	0	8	0	7.3	0.8
SWR	143	1	1	1.6	0.3	142	0	1	0	7.6	1.7
TAP	446	0	11	1.8	0.0	447	0	13	0	9.2	1.1
TEJ	70	1	20	1.8	0.1	69	0	19	0	9.2	0.4
TOW	147	1	1	1.7	0.0	150	0	1	1	8.0	1.1
TSC	218	3	5	2.4	0.8	218	0	5	0	9.2	1.6
TWA	1585	1	2	1.8	-0.1	1585	0	4	0	8.7	1.3
UAL	2203	0	1	2.1	-0.7	2244	0	2	1	7.5	1.1
ULE	89	1	2	1.6	-0.1	89	0	4	0	9.9	1.7
UPS	541	2	16	1.8	0.0	556	0	17	0	8.6	1.3
USA	204	0	4	1.8	-0.2	208	0	4	0	7.5	2.0
VIA	120	3	3	2.1	0.5	120	0	2	0	7.3	1.1
VIR	237	0	2	1.7	-0.5	238	0	5	0	9.4	2.0
WOA	105	0	2	1.7	0.2	104	0	2	0	7.8	1.3
BA	8951	0	22	1.6	0.5	8947	0	22	0	7.5	1.0
KL	4253	0	52	2.2	1.7	4253	0	19	0	7.7	1.2
LH	522	0	10	1.9	0.4	520	0	11	1	8.0	1.9
M	90	1	100	2.9	0.8	92	0	100	0	8.7	1.0
N	217	4	7	2.6	0.8	226	0	6	0	9.3	0.9

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	100	1	0	0.0	13.0	13.0
DBLK	12	Z	100	1	0	0.0	16.0	16.0
EHOA	00	Z	100	1	0	0.0	28.0	28.0
EHOA	12	Z	100	20	0	13.6	14.5	-5.1
F/RS	00	Z	100	1	0	0.0	7.0	7.0
FNOU	00	Z	100	10	0	15.7	17.7	8.1
FNOU	12	Z	100	11	0	10.7	12.7	-6.9
FNPH	00	Z	100	12	0	28.8	30.4	9.5
FNPH	12	Z	100	10	0	16.9	18.0	-6.1
FNRS	00	Z	100	15	0	19.9	21.3	7.6
FNRS	12	Z	100	18	0	27.4	29.5	-10.8
GACA	00	Z	100	21	0	12.8	15.3	8.5
GACA	12	Z	100	23	0	13.6	14.9	-6.1
JBOA	00	Z	100	1	0	0.0	23.0	-23.0
JCCX	00	Z	100	1	0	0.0	18.0	18.0
JDWX	00	Z	100	1	0	0.0	8.0	8.0
JGQH	00	Z	100	1	0	0.0	9.0	9.0
JIVB	00	Z	100	1	0	0.0	4.0	-4.0
LDWR	00	Z	100	30	0	7.9	9.4	4.9
LDWR	12	Z	100	30	0	11.1	13.3	-7.2
NPH	00	Z	100	1	0	0.0	6.0	6.0
OXVH2	00	Z	100	17	0	11.2	28.0	25.6
OXVH2	12	Z	100	11	0	18.0	26.2	19.0
OXYH2	00	Z	100	11	0	16.2	22.6	15.7
OXYH2	12	Z	100	16	0	20.1	26.0	16.6
SHIPAF	00	Z	100	3	0	8.6	27.4	26.0
SHIPAF	12	Z	100	2	0	14.0	31.3	28.0
SHIPS	00	Z	100	3	0	16.7	32.0	27.3
SHIP2	00	Z	100	1	0	0.0	9.0	-9.0
V/LV	00	Z	100	1	0	0.0	1.0	-1.0
V/0GH	00	Z	100	1	0	0.0	2.0	2.0
VNAA	00	Z	100	1	0	0.0	20.0	20.0
V2GH	00	Z	100	19	0	26.7	26.7	1.3
V2GH	12	Z	100	12	0	21.0	23.1	-9.5
V2LV	00	Z	100	25	0	19.7	22.0	-9.8
V2LV	12	Z	100	26	0	21.3	22.7	-7.9
V2LX	00	Z	100	29	0	25.4	30.1	16.2
V2LX	12	Z	100	28	0	21.0	22.6	8.3
WTEA	00	Z	100	1	0	0.0	11.0	11.0
03953	00	Z	100	30	0	19.9	22.6	10.7
03953	12	Z	100	31	0	11.6	12.6	5.0
04018	00	Z	100	29	0	9.6	26.2	24.4
04018	12	Z	100	30	0	14.6	29.0	25.1
04220	00	Z	100	29	0	14.4	31.4	27.9
04220	12	Z	100	31	0	11.7	28.2	25.7
04270	00	Z	100	30	0	16.3	22.1	14.9
04270	12	Z	100	30	0	12.2	15.7	9.8
04339	00	Z	100	26	0	16.4	22.4	15.2
04339	12	Z	100	30	0	15.0	28.1	23.8
04360	00	Z	100	28	0	15.9	26.4	21.0
04360	12	Z	100	31	0	12.5	23.0	19.3
08001	00	Z	100	29	0	24.5	34.6	24.4
08001	12	Z	100	31	0	23.6	24.4	6.2
08508	00	Z	100	30	0	12.3	15.2	8.9
08508	12	Z	100	30	0	14.1	16.0	-7.5
08594	00	Z	100	29	0	13.9	14.9	5.4
08594	12	Z	100	31	0	12.2	12.2	0.7
60020	00	Z	100	28	0	13.3	26.7	23.2
60020	12	Z	100	29	0	14.4	14.7	2.8
71600	00	Z	100	26	0	12.3	18.0	13.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
71600	12	Z	100	30	0	15.0	20.6	14.2
72201	00	Z	100	29	0	21.4	23.2	8.9
72201	12	Z	100	31	0	14.1	35.5	32.5
72402	00	Z	100	25	0	27.5	51.1	43.1
72402	12	Z	100	26	0	23.2	58.1	53.2
74494	00	Z	100	27	1	20.4	21.5	6.9
74494	12	Z	100	30	0	15.6	48.2	45.6
78016	00	Z	100	25	0	14.8	14.8	-1.2
78016	12	Z	100	24	0	15.6	15.6	-0.2

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.1	

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	500	1	0	0.0	1.0	-1.0
DBLK	12	Z	500	1	0	0.0	1.0	1.0
EHOA	00	Z	500	1	0	0.0	14.0	14.0
EHOA	12	Z	500	19	0	4.5	11.5	10.6
F/RS	00	Z	500	1	0	0.0	3.0	-3.0
FNOU	00	Z	500	11	0	6.2	8.3	5.5
FNOU	12	Z	500	12	0	5.4	5.7	1.8
FNPH	00	Z	500	13	0	10.6	11.5	-4.6
FNPH	12	Z	500	11	0	9.7	12.2	-7.3
FNRS	00	Z	500	17	0	13.0	13.3	2.7
FNRS	12	Z	500	18	0	14.5	14.5	0.6
GACA	00	Z	500	22	0	9.6	10.6	4.5
GACA	12	Z	500	23	0	10.6	10.6	-0.8
JBOA	00	Z	500	1	0	0.0	1.0	1.0
JCCX	00	Z	500	1	0	0.0	1.0	-1.0
JDWX	00	Z	500	1	0	0.0	3.0	-3.0
JGQH	00	Z	500	1	0	0.0	1.0	1.0
JIVB	00	Z	500	1	0	0.0	7.0	7.0
LDWR	00	Z	500	30	0	8.5	12.5	9.1
LDWR	12	Z	500	30	0	8.1	8.1	-0.7
NPH	00	Z	500	1	0	0.0	9.0	-9.0
OXVH2	00	Z	500	17	0	15.3	17.1	7.5
OXVH2	12	Z	500	11	0	10.2	11.0	4.1
OXYH2	00	Z	500	13	0	20.1	20.3	3.1
OXYH2	12	Z	500	17	0	10.9	11.5	-3.7
SHIP	00	Z	500	1	0	0.0	4.0	4.0
SHIP	12	Z	500	2	0	8.5	17.7	15.5
SHIPAF	00	Z	500	7	0	9.7	12.6	8.0
SHIPAF	12	Z	500	4	0	7.7	10.3	6.8
SHIPS	00	Z	500	4	0	2.8	14.0	13.8
SHIPS	12	Z	500	1	0	0.0	6.0	6.0
SHIP2	00	Z	500	1	0	0.0	1.0	1.0
V/LV	00	Z	500	1	0	0.0	10.0	10.0
V/0GH	00	Z	500	1	0	0.0	17.0	-17.0
VNAA	00	Z	500	1	0	0.0	8.0	8.0
V2GH	00	Z	500	19	0	14.8	15.1	-2.9
V2GH	12	Z	500	14	0	12.2	13.3	-5.3
V2LV	00	Z	500	25	0	12.7	13.0	-2.6
V2LV	12	Z	500	26	0	10.9	11.2	2.9
V2LX	00	Z	500	29	0	13.9	15.5	6.7
V2LX	12	Z	500	28	0	11.4	11.5	0.8
WTEA	00	Z	500	1	0	0.0	3.0	3.0
03953	00	Z	500	30	0	10.3	12.1	6.3
03953	12	Z	500	31	0	11.6	11.7	-2.0
04018	00	Z	500	29	0	11.7	15.1	9.6
04018	12	Z	500	30	0	16.0	18.3	8.9
04220	00	Z	500	29	0	9.3	12.4	8.1
04220	12	Z	500	31	0	9.0	11.2	6.7
04270	00	Z	500	30	0	15.3	16.7	6.9
04270	12	Z	500	31	0	11.6	11.6	0.4
04339	00	Z	500	27	0	14.7	15.9	6.1
04339	12	Z	500	30	0	8.7	8.7	-0.3
04360	00	Z	500	28	0	10.7	11.1	2.6
04360	12	Z	500	31	0	11.3	11.3	0.4
08001	00	Z	500	29	0	13.3	15.5	7.9
08001	12	Z	500	31	0	22.1	23.5	-8.1
08508	00	Z	500	30	0	10.8	11.5	3.9
08508	12	Z	500	30	0	9.9	10.9	-4.4
08594	00	Z	500	29	0	8.2	8.3	1.0
08594	12	Z	500	31	0	6.9	7.3	-2.4

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
60020	00	Z	500	28	0	9.8	18.9	16.1
60020	12	Z	500	28	0	12.1	14.5	8.1
71600	00	Z	500	30	0	9.4	9.4	0.2
71600	12	Z	500	31	0	10.4	15.3	11.3
72201	00	Z	500	30	0	7.4	12.8	10.4
72201	12	Z	500	31	0	7.2	18.9	17.5
72402	00	Z	500	30	0	8.1	12.0	8.9
72402	12	Z	500	31	0	10.1	20.5	17.9
74494	00	Z	500	27	1	8.8	9.3	-2.9
74494	12	Z	500	30	0	6.5	9.5	6.9
78016	00	Z	500	27	0	8.8	9.5	3.5
78016	12	Z	500	25	0	9.8	12.3	7.5

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in $m\ s^{-1}$
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.2	

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	100	1	0	0	7.6	-0.6	-1.3
DBLK	12	V	100	1	0	0	7.6	-0.6	0.2
EHOA	00	V	100	1	0	0	7.6	-1.8	3.3
EHOA	12	V	100	19	0	0	7.6	-0.8	0.6
FNOU	00	V	100	10	0	0	3.5	-2.1	0.9
FNOU	12	V	100	11	0	0	4.0	1.6	-1.6
FNPH	00	V	100	9	0	0	2.7	-1.2	-0.2
FNPH	12	V	100	10	0	0	2.7	-0.5	-0.2
FNRS	00	V	100	13	0	0	2.4	-1.0	-0.4
FNRS	12	V	100	18	0	5	2.7	0.3	-2.2
GACA	00	V	100	20	0	0	6.1	0.1	-0.7
GACA	12	V	100	23	0	0	1.5	-0.6	-0.1
JBOA	00	V	100	1	0	0	1.7	0.2	-2.0
JCCX	00	V	100	1	0	0	1.7	-1.1	1.0
JDWX	00	V	100	1	0	0	1.7	-0.1	-0.4
JGQH	00	V	100	1	0	0	1.7	-2.2	1.2
JIVB	00	V	100	1	0	0	1.7	-0.5	0.3
LDWR	00	V	100	30	0	0	3.8	-0.1	0.2
LDWR	12	V	100	30	0	0	1.1	-0.4	-0.1
NPH	00	V	100	1	0	0	1.1	4.7	8.4
OXVH2	00	V	100	17	0	0	1.1	-0.1	0.6
OXVH2	12	V	100	11	0	0	1.6	-0.3	0.0
OXYH2	00	V	100	11	0	0	1.5	-0.3	0.4
OXYH2	12	V	100	16	0	0	1.6	-0.7	-0.6
SHIPAF	00	V	100	2	0	0	2.0	-1.7	-1.0
SHIPAF	12	V	100	1	0	0	2.0	-1.0	-3.7
SHIPS	00	V	100	3	0	0	2.0	3.4	1.1
SHIP2	00	V	100	1	0	0	2.0	0.9	3.4
V/LV	00	V	100	1	0	0	2.0	7.2	-9.8
V/0GH	00	V	100	1	0	0	2.0	8.7	0.0
VNAA	00	V	100	1	0	0	2.0	-1.2	3.9
V2GH	00	V	100	19	0	0	2.0	-0.9	0.6
V2GH	12	V	100	13	0	0	4.6	-0.1	0.4
V2LV	00	V	100	25	0	0	3.9	-1.1	1.0
V2LV	12	V	100	24	0	0	4.2	-1.2	-0.2
V2LX	00	V	100	28	0	0	4.7	0.3	0.7
V2LX	12	V	100	28	0	0	3.1	-0.2	0.6
WTEA	00	V	100	1	0	0	2.8	1.4	1.9
03953	00	V	100	30	0	0	2.4	-0.2	0.5
03953	12	V	100	31	0	0	2.3	-1.1	0.3
04018	00	V	100	27	0	0	2.0	0.1	0.4
04018	12	V	100	30	0	0	1.7	-0.5	-0.4
04220	00	V	100	29	0	3	1.9	0.4	-0.6
04220	12	V	100	31	0	0	3.3	0.6	0.2
04270	00	V	100	30	0	0	1.1	0.7	0.9
04270	12	V	100	30	0	0	1.9	0.4	0.1
04339	00	V	100	26	0	0	1.4	0.3	0.4
04339	12	V	100	29	0	0	1.1	0.6	-0.8
04360	00	V	100	28	0	0	1.6	-0.2	-0.1
04360	12	V	100	31	0	0	1.5	-0.1	-0.8
08001	00	V	100	29	0	0	1.9	0.7	1.3
08001	12	V	100	30	0	0	3.1	-0.1	-0.3
08508	00	V	100	30	0	0	2.8	1.0	0.7
08508	12	V	100	29	0	0	2.7	0.4	0.1
08594	00	V	100	30	0	0	2.5	-0.5	-0.8
08594	12	V	100	31	0	0	2.8	0.2	0.9
60020	00	V	100	28	0	0	2.9	-0.8	0.9
60020	12	V	100	29	0	0	3.4	0.2	0.6
71600	00	V	100	26	0	0	6.1	-1.1	0.7
71600	12	V	100	30	0	0	2.6	-1.5	-0.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72201	00	V	100	29	0	0	2.0	1.4	0.4
72201	12	V	100	31	0	0	2.8	0.2	1.2
72402	00	V	100	25	0	0	3.0	-0.7	0.0
72402	12	V	100	26	0	0	3.2	-1.1	-0.4
74494	00	V	100	27	0	0	6.1	-1.1	0.4
74494	12	V	100	30	0	0	4.0	-0.5	-0.4
78016	00	V	100	27	0	0	3.7	0.2	-0.6
78016	12	V	100	24	0	0	3.7	1.7	-0.2

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:July, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :VECTOR WIND in m s^{-1}

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	500	1	0	0	2.8	-3.7	-1.3
DBLK	12	V	500	1	0	0	2.8	-3.1	-0.2
EHOA	00	V	500	1	0	0	2.8	2.1	0.1
EHOA	12	V	500	19	0	0	2.8	-1.6	1.4
F/RS	00	V	500	1	0	0	4.1	-3.5	-3.9
FNOU	00	V	500	11	0	0	4.1	-0.7	0.8
FNOU	12	V	500	12	0	0	2.9	0.3	0.6
FNPH	00	V	500	13	0	0	3.6	1.0	-2.2
FNPH	12	V	500	12	0	0	3.1	-0.6	-1.4
FNRS	00	V	500	16	0	0	2.9	0.0	-0.4
FNRS	12	V	500	18	0	5	2.8	-1.3	-1.5
GACA	00	V	500	22	0	0	3.6	0.2	-0.4
GACA	12	V	500	23	0	0	2.6	-0.6	0.5
JBOA	00	V	500	1	0	0	2.5	-2.3	0.0
JCCX	00	V	500	1	0	0	2.5	1.9	-0.4
JDWX	00	V	500	1	0	0	2.5	-1.8	1.0
JGQH	00	V	500	1	0	0	2.5	-0.8	-1.3
JIVB	00	V	500	1	0	0	2.5	-0.4	-1.6
LDWR	00	V	500	30	0	0	4.7	0.3	0.1
LDWR	12	V	500	30	0	0	2.6	0.5	-0.3
NPH	00	V	500	1	0	0	2.9	1.6	0.6
OXVH2	00	V	500	17	0	0	2.9	0.2	1.6
OXVH2	12	V	500	11	0	0	3.4	1.4	0.1
OXYH2	00	V	500	13	0	0	2.8	1.9	1.0
OXYH2	12	V	500	17	0	0	2.7	0.4	0.8
SHIP	00	V	500	1	0	0	3.7	-10.9	0.4
SHIP	12	V	500	2	0	50	3.7	-6.8	2.9
SHIPAF	00	V	500	5	0	0	3.7	-0.7	0.1
SHIPAF	12	V	500	4	0	0	3.7	1.0	-0.2
SHIPS	00	V	500	3	0	0	3.7	-1.0	1.7
SHIPS	12	V	500	1	0	0	3.7	0.4	-0.3
SHIP2	00	V	500	1	0	0	3.7	-1.9	-3.2
V/LV	00	V	500	1	0	0	3.7	-2.4	-0.1
V/0GH	00	V	500	1	0	0	3.7	-3.6	-1.2
VNAA	00	V	500	1	0	0	3.7	1.4	0.0
V2GH	00	V	500	19	0	0	3.7	0.6	0.4
V2GH	12	V	500	14	0	0	4.1	0.0	-1.0
V2LV	00	V	500	25	0	0	2.6	-0.2	-0.3
V2LV	12	V	500	26	0	0	2.5	-0.1	-0.4
V2LX	00	V	500	29	0	0	2.1	-0.1	0.7
V2LX	12	V	500	27	0	0	2.7	-0.6	-0.3
WTEA	00	V	500	1	0	0	2.6	-2.4	0.3
03953	00	V	500	30	0	0	2.8	-0.7	-0.6
03953	12	V	500	31	0	0	3.1	-0.4	0.2
04018	00	V	500	29	0	0	3.2	-0.3	0.7
04018	12	V	500	30	0	0	3.2	0.5	0.1
04220	00	V	500	29	0	0	2.3	1.2	-0.2
04220	12	V	500	31	0	0	3.1	0.1	-0.5
04270	00	V	500	30	0	0	2.5	0.2	1.4
04270	12	V	500	31	0	0	3.2	0.3	0.8
04339	00	V	500	26	0	0	4.0	1.2	0.6
04339	12	V	500	29	0	0	2.9	0.5	0.5
04360	00	V	500	26	0	0	2.7	0.0	0.9
04360	12	V	500	31	0	0	2.5	0.2	-0.3
08001	00	V	500	29	0	0	3.0	1.9	-0.2
08001	12	V	500	31	0	0	3.3	-0.5	-0.8
08508	00	V	500	30	0	0	2.9	0.1	-0.8
08508	12	V	500	29	0	0	2.6	-0.4	-1.3
08594	00	V	500	29	0	0	2.5	-0.7	0.2
08594	12	V	500	31	0	0	2.9	-1.1	0.3

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
60020	00	V	500	28	0	0	2.9	-0.2	0.0
60020	12	V	500	28	0	0	2.2	-1.2	-1.0
71600	00	V	500	30	0	0	8.9	0.2	-0.2
71600	12	V	500	29	0	0	3.3	1.2	0.0
72201	00	V	500	30	0	0	1.7	-0.1	-0.7
72201	12	V	500	31	0	0	2.5	-0.2	0.3
72402	00	V	500	28	0	0	2.9	0.4	0.2
72402	12	V	500	30	0	0	2.5	-0.5	1.2
74494	00	V	500	28	0	0	9.8	0.1	0.3
74494	12	V	500	30	0	0	2.4	0.5	2.0
78016	00	V	500	27	0	0	2.3	1.3	0.0
78016	12	V	500	25	0	0	2.6	1.1	0.7

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45